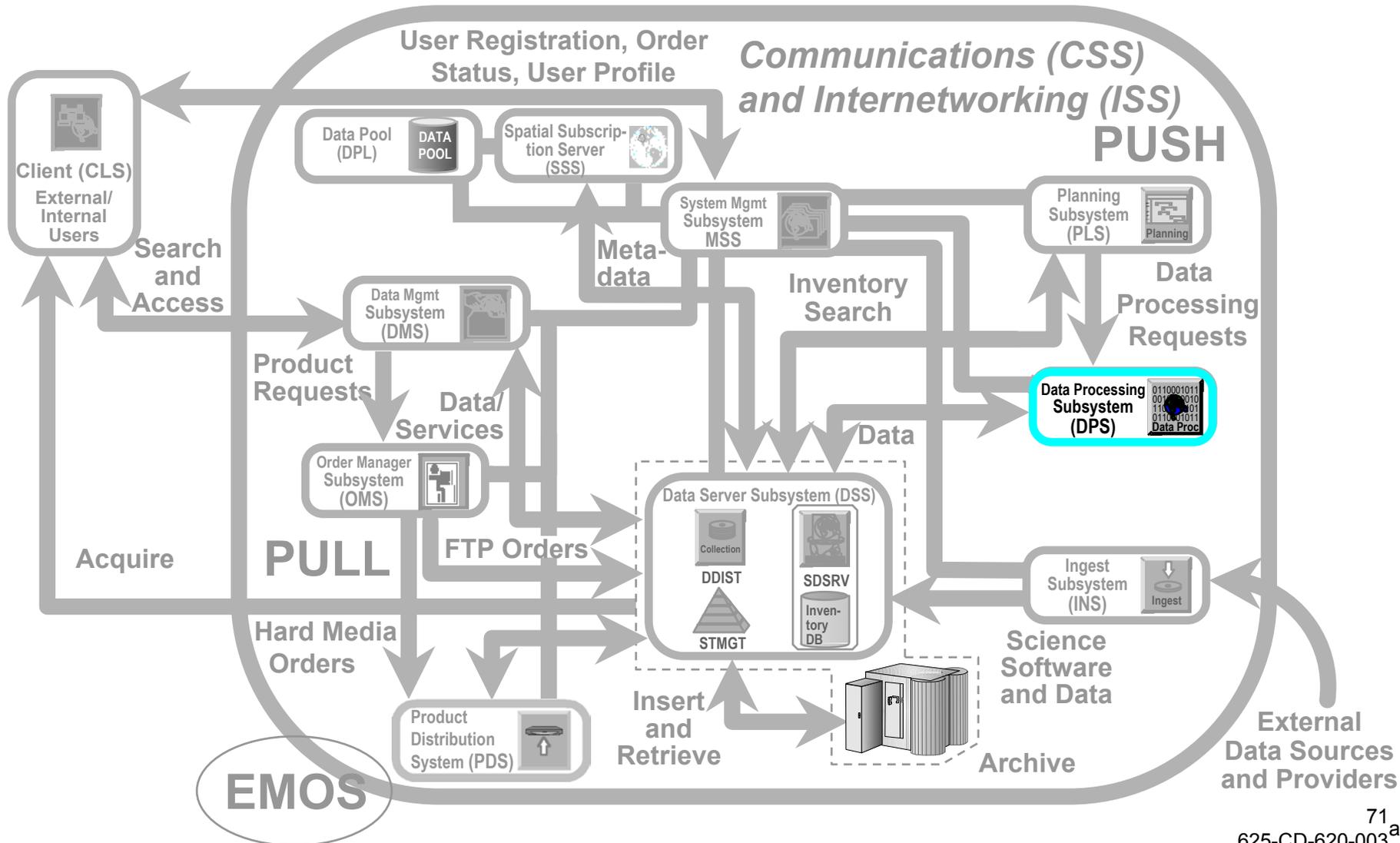
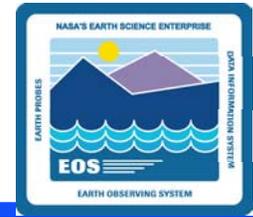


Subsystems and CSCIs: DPS



Subsystems and CSCIs: DPS



- **Data Processing Subsystem (DPS)**
 - Manages allocation and recovery of computer resources (e.g., CPU, disk space) used in processing science data
 - Manages, queues, and executes DPRs
 - Supports execution of science algorithms through the Science Data Processing (SDP) Toolkit
 - Supports preliminary processing of ancillary data sets
 - Provides an Algorithm Integration and Test (AIT) environment for the introduction of science software
 - Provides a Quality Assessment (QA) environment for updating the quality flags in metadata for data products
 - Uses COTS tools
 - AutoSys: a job scheduling software application to automate operations in a distributed UNIX environment
 - AutoXpert: provides mechanisms and GUIs to monitor and manage the job schedule being processed in AutoSys
 - Sybase: ASE server

Subsystems and CSCIs: DPS (Cont.)



- **Processing (PRONG) CSCI**
 - Provides services required to manage and monitor the Science Data Processing environment, which executes Science Software items (PGEs) and produces data products
 - Nine major components
 - **Job Management** - handles flow of information to the COTS products; also creates and starts Ground Event jobs
 - **Execution Management** - initiates execution of PGEs and performs final activities subsequent to execution of PGEs; handles flow of science data to and from science processing resources (through a data management software library, DpPrDM); also provides status of On-demand Processing requests
 - **PGE Management** - controls and monitors execution of PGEs and the growth of the output products (EcDpPrRunPGE); measures and reports resource use to AutoSys (EcDpPrRusage)

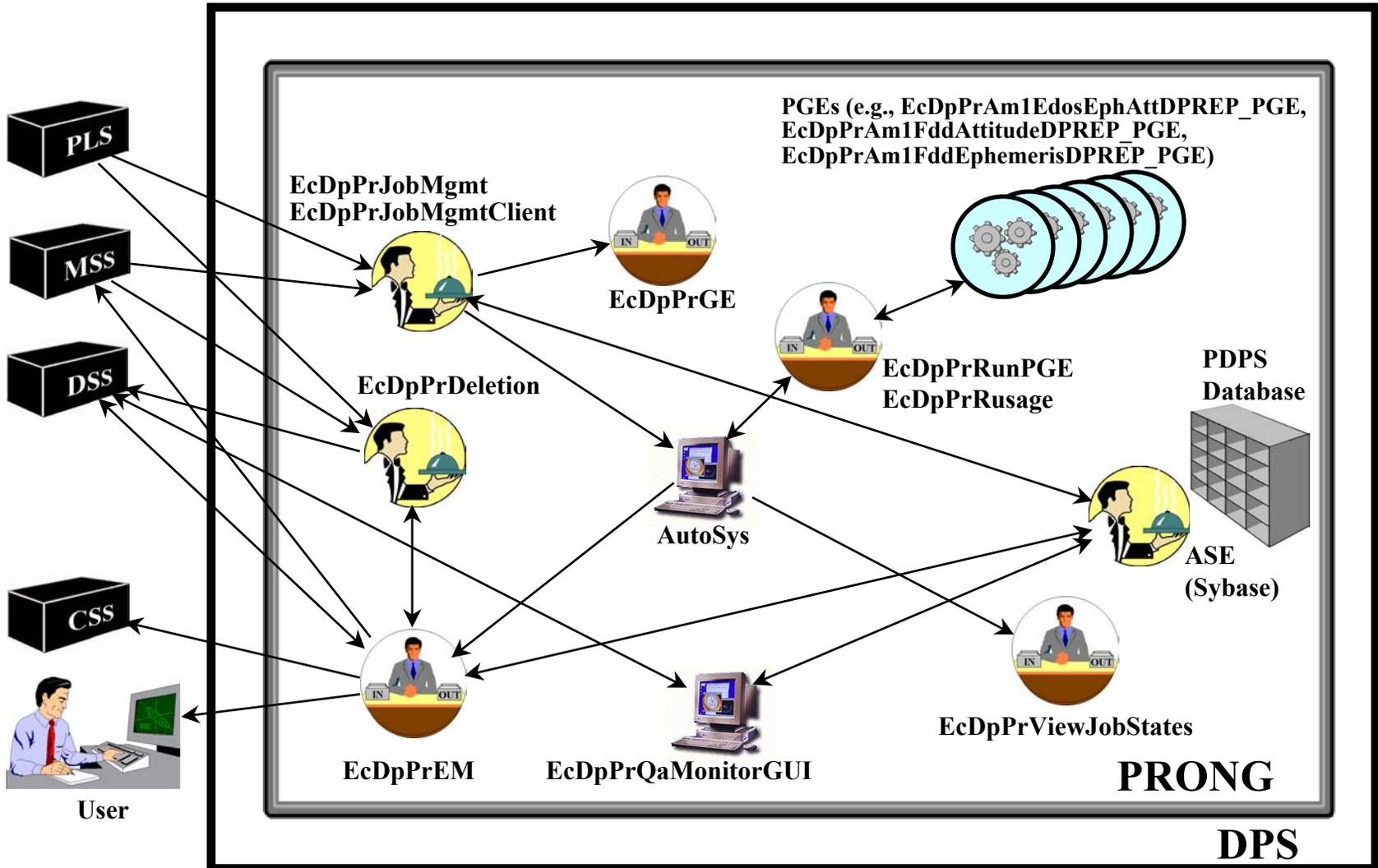
Subsystems and CSCIs: DPS (Cont.)



- **Processing (PRONG) CSCI (Cont.)**
 - **Nine major components (Cont.)**
 - **Deletion Server** - notifies Science Data Server to remove interim granules that are no longer needed
 - **Quality Assurance Monitor** - supports visualizing science data products and updating QA metadata
 - **Data Preprocessing** - manages preprocessing of ancillary data used as inputs to a PGE
 - **AutoSys** - provides the job scheduling engine (COTS)
 - **Data Store** - handles insertion of data for planning and processing activities into the PDPS shared database
 - **Ground Event Process** - initiated by Job Management upon receipt of a ground event request; sets a computer resource to an off-line state, making it unavailable for PGEs during the request

Subsystems and CSCIs: DPS (Cont.)

PRONG Architecture and Interfaces



Subsystems and CSCIs: DPS (Cont.)



- **Algorithm Integration and Test Tools (AITTL) CSCI**
 - Provides a set of tools used for testing and integration of new science software, new versions of science software, and user methods into the Science Data Processing operational environment
 - Combines custom-developed code with COTS software
 - Tools are accessed from a centralized application called the Science Software Integration and Test (SSIT) Manager

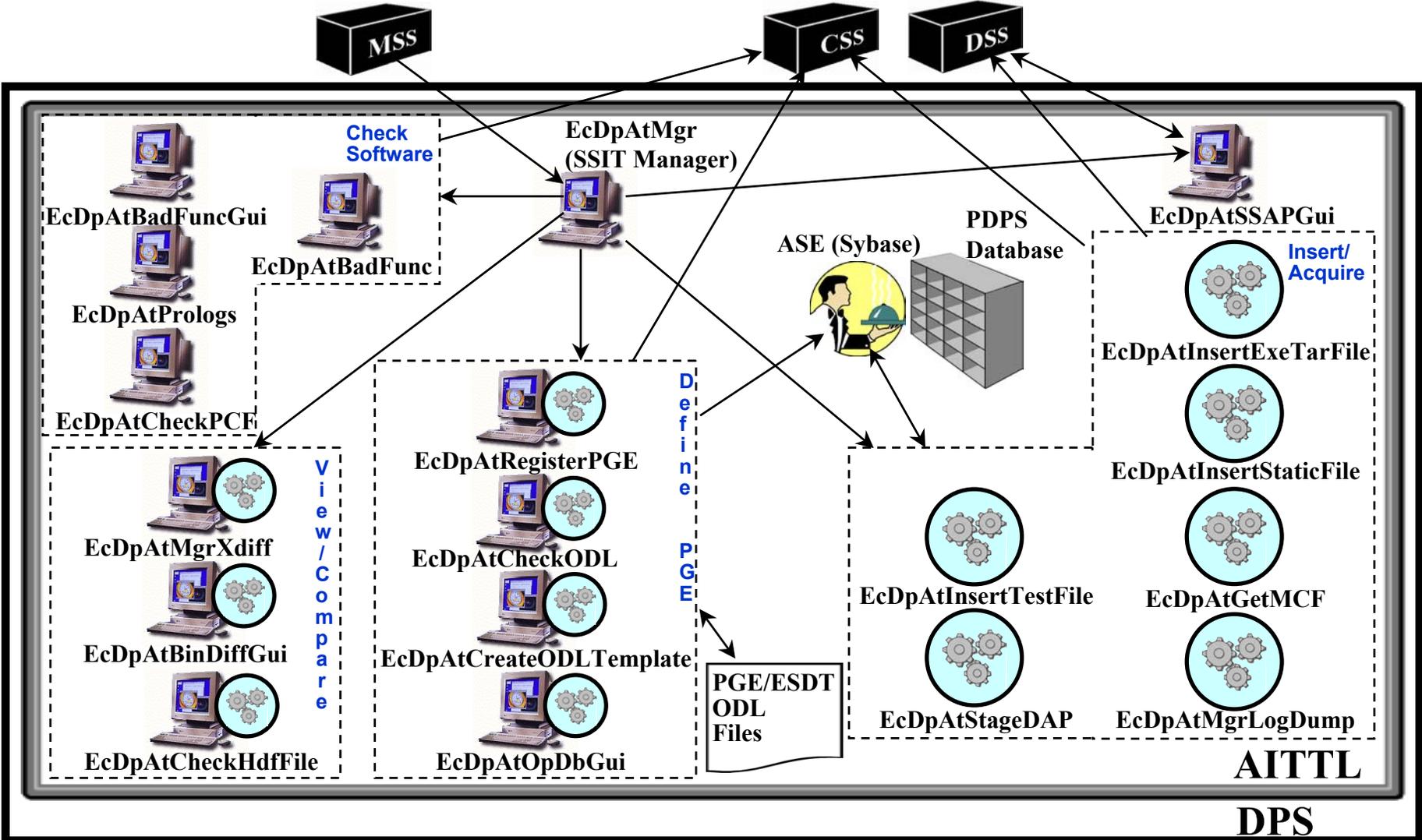
Subsystems and CSCIs: DPS (Cont.)



- **Algorithm Integration and Test Tools (AITTL) CSCI (Cont.)**
 - **Six major components**
 - **Science Software Archive Package (SSAP) GUI** - allows for the creation, update, and deletion of SSAPs
 - **SSIT Manager** - GUI for SSIT activities; provides menus to launch other SSIT applications and a checklist to mark completion of SSIT functions
 - **Define PGE** - a group of applications to specify a PGE in the PDPS database
 - **View/Compare Tools** - a group of applications for viewing and comparing data files
 - **Check Software Tools** - a group of applications that check the source code for PGEs and their process control files (PCFs) for errors or prohibited functions
 - **Insert/Acquire Tools** - a group of applications that provide mechanisms to insert and acquire data items from Data Server

Subsystems and CSCIs: DPS (Cont.)

AITTL Architecture and Interfaces



Subsystems and CSCIs: DPS (Cont.)



- **SDP Toolkit (SDPTK) CSCI**
 - Not described in detail in this course
 - Provides a set of software tools used to integrate Science Software into ECS
 - Provides common functionality (e.g., geolocation) required across the ECS community
 - Allows Science Data Processing to support generation of data products in a heterogeneous computer hardware environment
 - Facilitates the smooth transition and integration of science software code into the DAAC by abstracting out science process dependencies on external system architecture
 - Provides an interface between science software and the production system environment
 - Interface is implemented in both the SCF development environments and DAAC production environments

Subsystems and CSCIs: DPS (Cont.)



- **SDP Toolkit (SDPTK) CSCI (Cont.)**
 - **Insulates science software from the SDP software and provides a development environment that emulates critical SDP functions**
 - **Helps ensure code portability as the algorithm is ported from development hardware, through the DAAC system, and through potential hardware changes as ECS matures**
 - **Provides for limited access and control to system level resources, including processes, shared memory, and I/O capabilities**
 - **Where control of system resources is necessary (e.g., shared memory allocation), Toolkit provides a set of routines through which the application must obtain those services**
 - **Partitioning and layering of operating system services allows Toolkit to work on behalf of DPS in allocating, deallocating, and making use of system-wide shared resources**

Subsystems and CSCIs: DPS (Cont.)



- **SDP Toolkit (SDPTK) CSCI (Cont.)**

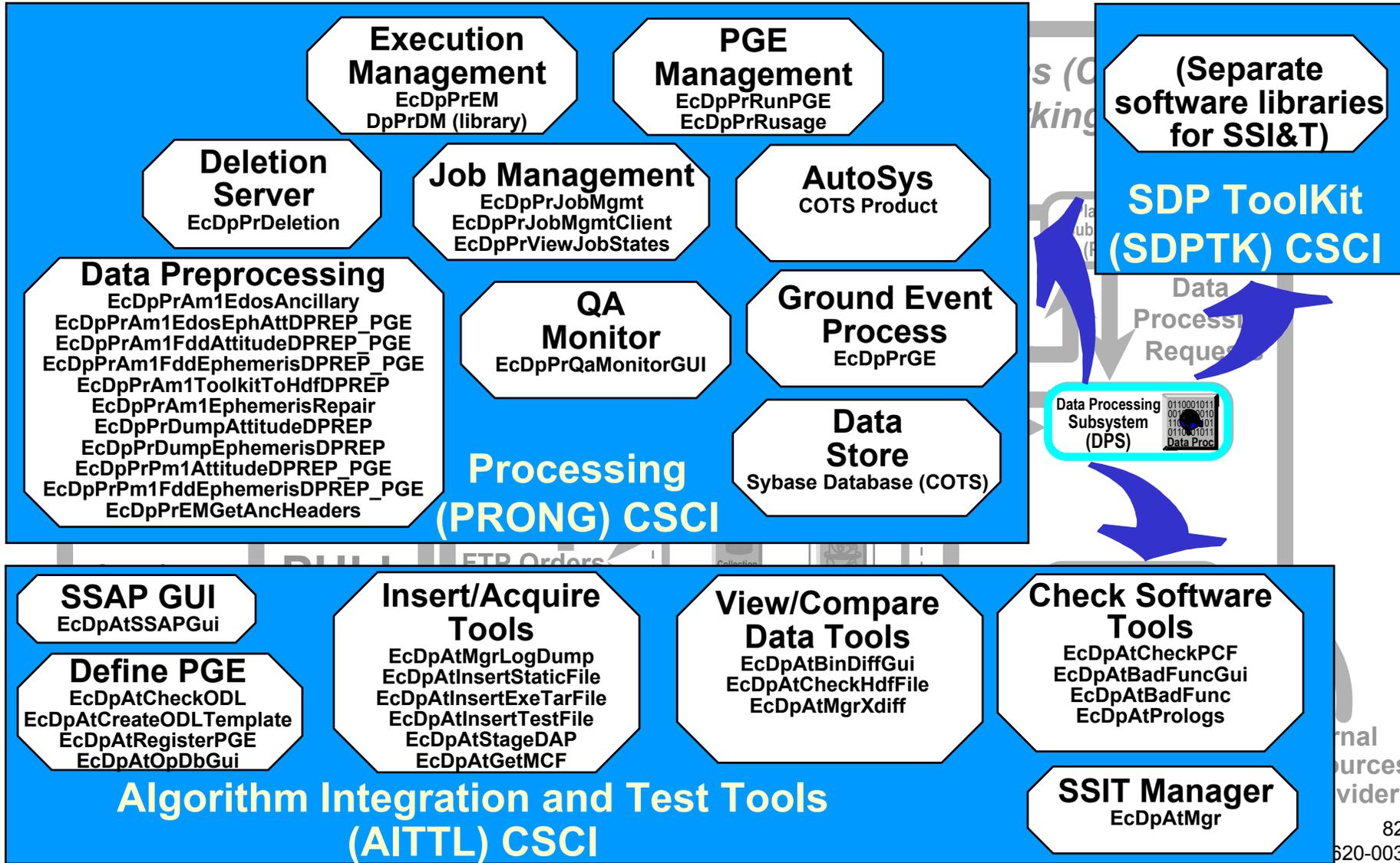
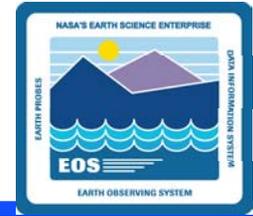
- **SDP Toolkit Tools - Mandatory**

- File I/O Tools
 - Error/Status Reporting [Status Message File (SMF) Tools]
 - Process Control Tools
 - Shared Memory Management Tools
 - Bit Manipulation Tools
 - Spacecraft Ephemeris and Attitude Data Access Tools
 - Time and Date Conversion Tools

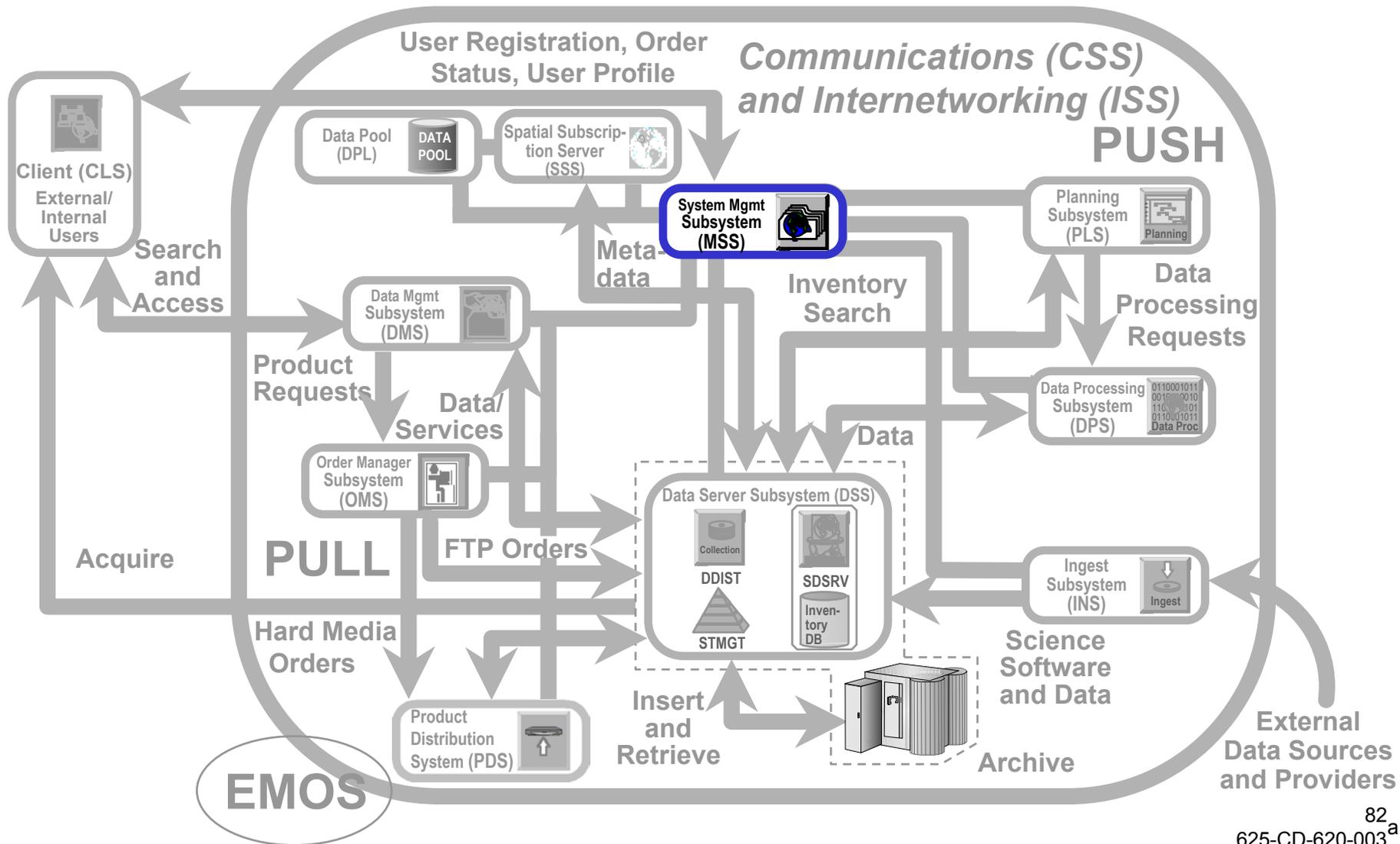
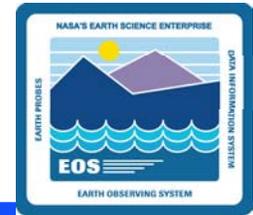
- **SDP Toolkit Tools - Optional**

- Digital Elevation Model Tools
 - Ancillary Data Tools
 - Celestial Body Position Tools
 - Coordinate System Conversion Tools
 - Geo-Coordinate Transformation Tools
 - Math and Statistical Support Tools
 - Constants and Unit Conversions
 - Dynamic Memory Management Tools
 - Graphics Support Tools

Subsystems and CSCIs: DPS (Cont.)



Subsystems and CSCIs: MSS



Subsystems and CSCIs: MSS



- **System Management Subsystem (MSS)** The icon for the System Management Subsystem (MSS) is a blue rounded rectangle containing the text "System Mgmt Subsystem (MSS)" and a small graphic of a computer monitor and keyboard.
 - Provides the set of tools needed by Maintenance & Operations (M&O) staff to manage ECS operations
 - Addresses 5 areas
 - Fault Management
 - Configuration Management
 - Accountability Management
 - Performance Management
 - Security Management
 - Installed locally at each DAAC and at System Monitoring and Coordination Center (SMC)
 - Uses COTS applications extensively, including Sybase Replication Server
 - Includes **ECS Assistant**, a GUI that runs an extensive array of UNIX scripts for system installation, monitoring, and administration

Subsystems and CSCIs: MSS (Cont.)



- **Management CSCI (MCI)**
 - Primarily COTS-based, with some custom software
 - Provides services for monitoring and coordinating ECS
 - **Network and Enterprise Management Framework** component
 - **Whazzup???**
 - Monitors server status
 - Monitors host resource usage
 - **WhatsUp Gold**
 - Network monitoring
 - Fault detection
 - **Security** component
 - Various freeware or public domain packages
 - Monitor and evaluate security and report status

Subsystems and CSCIs: MSS (Cont.)



- **Management CSCI (MCI) (Cont.)**
 - **Accountability Management Service (AMS) component**
 - Custom software
 - Account Management Tool (for User Registration and User Profile updates)
 - Order Tracking Tool
 - Sybase ASE Server/Sybase Replication Server

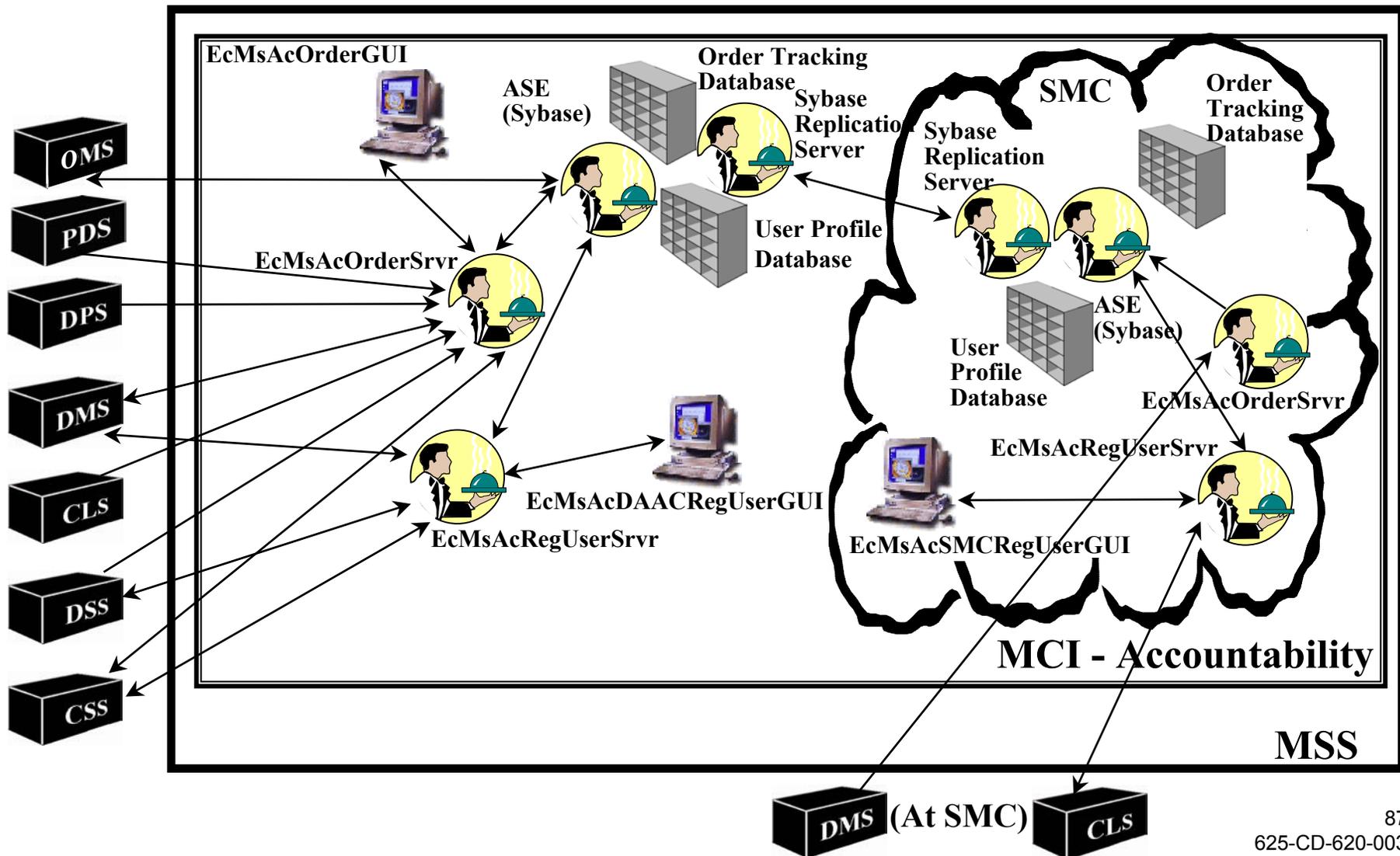
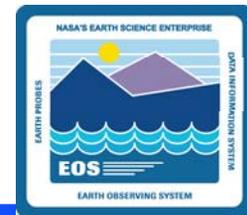
Subsystems and CSCIs: MSS (Cont.)



- **Management CSCI (MCI) (Cont.)**
 - **Trouble Ticketing** component
 - Custom-configured COTS software: Remedy Action Request System
 - **Network Backup/Restore** component
 - COTS software: Legato Networker
 - **ASTER Standard Header Handler** component
 - Custom scripts work with COTS e-mail to add a formatted header to all e-mail exchanges between the ASTER Ground Data System and ECS

Subsystems and CSCIs: MSS (Cont.)

AMS Architecture and Interfaces



Subsystems and CSCIs: MSS (Cont.)



- **Management Logistics CSCI (MLCI)**
 - Implements Configuration Management services
 - **Baseline Manager** component
 - Customized COTS software: a ClearCase application
 - Uses Sybase Relational Database Management System
 - Helps maintain records that document the hardware and software items that comprise baselined, operational system configurations

Subsystems and CSCIs: MSS (Cont.)



- **Management Logistics CSCI (MLCI) (Cont.)**
 - **Inventory/Logistics/Maintenance (ILM) Manager component**
 - **Customized COTS software: a Remedy application**
 - **Tracks and maintains key data on ECS contract-purchased equipment, hardware, COTS software, COTS documentation (hardware and software), spares and consumable items, and Government Furnished Equipment (GFE)**
 - **Stores and maintains detailed maintenance data on hardware to the component level, including preventive and corrective maintenance**

Subsystems and CSCIs: MSS (Cont.)



- **Management Logistics CSCI (MLCI) (Cont.)**
 - **Software Change Manager** component
 - **Consists of COTS and custom software**
 - ClearCase (with some customization)
 - Supporting UNIX scripts
 - **Helps organize and partition software, control software changes and versions, and assemble sets of software for release**

Subsystems and CSCIs: MSS (Cont.)



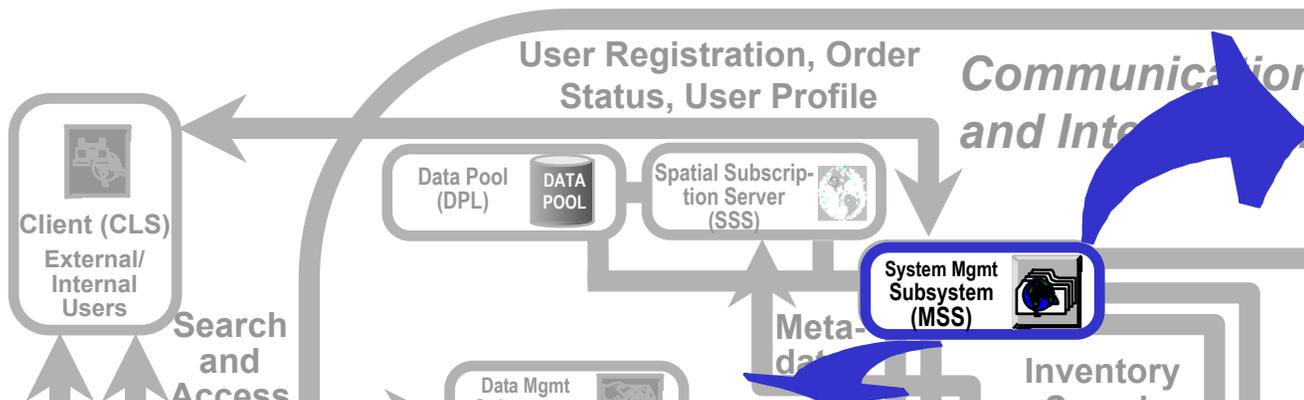
- **Management Logistics CSCI (MLCI) (Cont.)**
 - **Change Request Manager** component
 - Customized COTS application: Distributed Defect Tracking System (DDTS)
 - Enables DAACs and SMC to enter, maintain, and track Configuration Change Requests (CCRs)
 - Provides capability to compose and maintain local CCRs and to compose and submit CCRs to the SMC for system-wide consideration
 - Communication between site Change Request Managers can be established through a DDTS utility program and maintained by each site's DDTS administrator

Subsystems and CSCIs: MSS (Cont.)



- **Management Logistics CSCI (MLCI) (Cont.)**
 - **Software License Manager component**
 - **COTS software**
 - FLEXIm (license manager) and iFOR/LS (license server daemon) COTS packages
 - **Manages network licensing activities associated with using COTS products; maintains information about license provisions, meters use of installed licenses, and reports on licensing events and statistics**

Subsystems and CSCIs: MSS (Cont.)



Management CSCI (MCI)

- Network and Enterprise Management**
 - Whazzup???
 - WhatsUp Gold
- Accountability**
 - EcMsAcRegUserSrvr
 - EcMsAcSMCRegUserGUI
 - EcMsAcDAACRegUserGUI
 - EcMsAcOrderSrvr
 - EcMsAcOrderGUI
 - Sybase Replication Server
- Trouble Ticket**
 - aruser GUI (COTS)
 - aradmin GUI (COTS)
 - MsTfHTML web interface
 - notifier GUI (COTS)
 - notifier daemon (COTS)
 - Submit, Query, Notify (COTS)
 - armail daemon (COTS)
 - UNIX sendmail
- Network Backup/Restore**
 - Networker Server (COTS)
 - Networker Client (COTS)
- Security**
 - anpasswd (COTS)
 - TCP Wrappers (COTS)
 - Tripwire (COTS)
 - SATAN (COTS)
 - Crack (COTS)
- ASTER E-mail Header Handler**
 - EcMsAsAddHeader.pl
 - EcMsRemoveHeader.pl

Management Logistics CSCI (MLCI)

- Baseline Mgr**
 - ClearCase (COTS)
- Inventory/Logistics/Maintenance Mgr**
 - Remedy (COTS)
- Software Change Mgr**
 - ClearCase (COTS)
- Change Request Mgr**
 - DDTS (COTS)
- Software License Mgr**
 - FLEXlm (COTS)
 - iFOR/LS (COTS)

Subsystems and CSCIs: CSS (Cont.)



CSS/Distributed Communications Software

- **Communications Subsystem (CSS)**
 - Provides for interconnection of users and service providers and transfer of information within ECS and between ECS and other EOIS components, including a machine-to-machine gateway for SIPS access to ECS data
 - Supports and interacts with the System Management Subsystem (MSS), ECS Mission Operations Segment (EMOS), and all other subsystems
 - Uses several COTS tools: RogueWave class libraries, Builder Xcessory (GUI Builder tool), Sybase ASE Server (for Subscription Server insert, search, and update), UNIX Network Services

Subsystems and CSCIs: CSS (Cont.)



- **Distributed Computing Configuration Item (DCCI)**
 - **Subscription Server (SBSRV) and GUI components**
 - Detects previously defined events
 - Performs specified actions for clients that have previously subscribed to those events (e.g., science granule insertion, metadata update, science granule deletion)
 - Being replaced by Spatial Subscription Server (NSBRV)
 - **ASTER DAR Gateway Server component (hosted at EDC)**
 - Provides interoperability between ASTER DAR Client GUI tool and the DAR API which interfaces to the ASTER servers
 - **ASTER EMailParser Gateway component**
 - Support for automated delivery of ASTER Expedited Data Sets (EDS) from ECS to ASTER Ground Data System (GDS)
 - **Message-Oriented Java Object (MOJO) Gateway Server component**
 - Gateway for access by the ASTER DAR Tool to all ECS Services; directs DARs to GDS via ASTER DAR Gateway

Subsystems and CSCIs: CSS (Cont.)



- **Distributed Computing Configuration Item (DCCI) (Cont.)**
 - **CCS Middleware Support** component
 - COTS server locator services software
 - **FTP (File Transfer Protocol)** component (standard application for file transfers)
 - **FTP Notification** component (for notification of successful FTP pulls from a pull area)
 - **BDS (Bulk Data Server)** component (fast file transfer over high-speed networks such as Gigabit Ethernet)
 - **NFS (Network File System)** component (for file systems sharing among computers)
 - **Filecopy** component (a simple utility to copy large files from a specified source to a specified destination, with compression options)

Subsystems and CSCIs: CSS (Cont.)



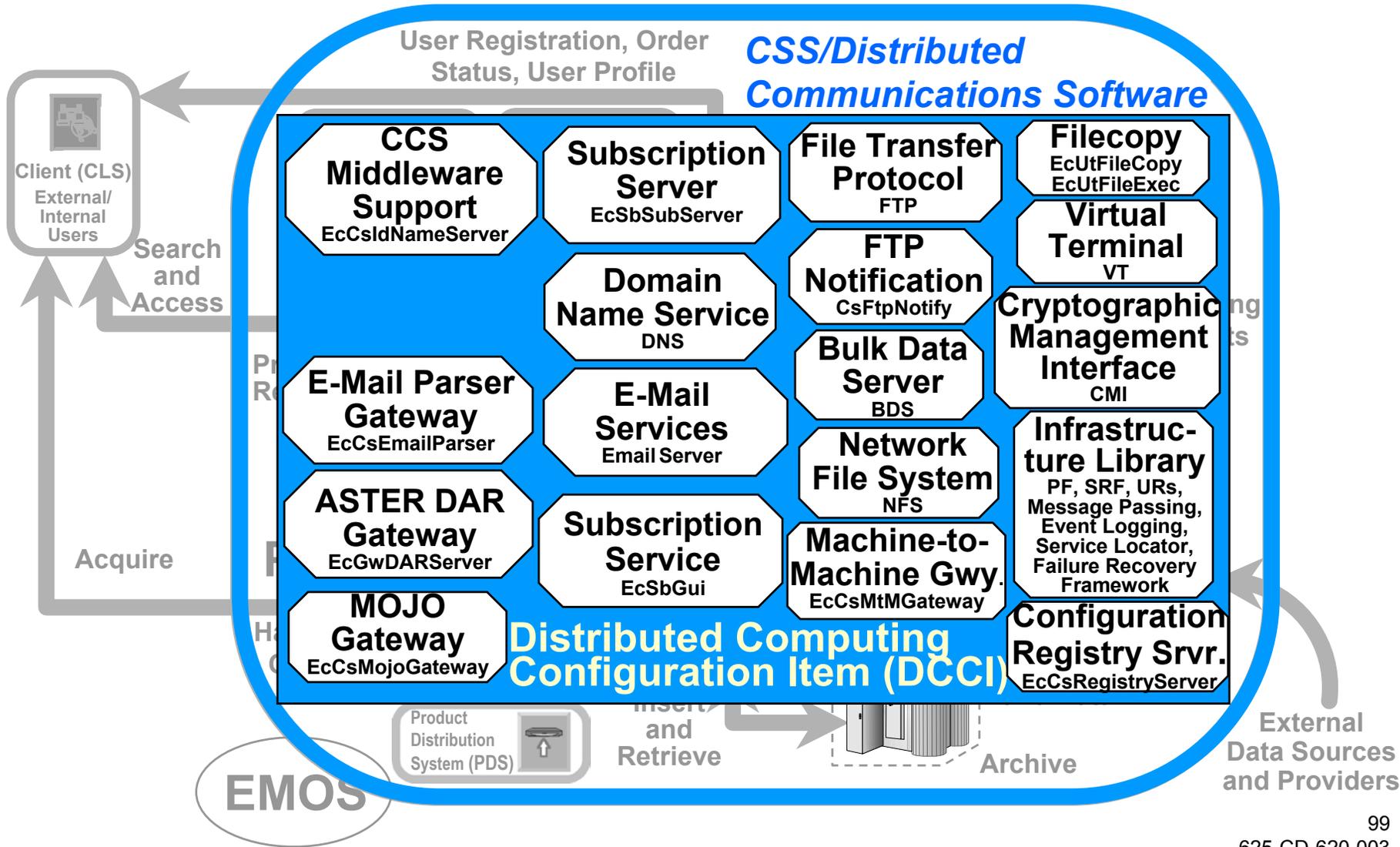
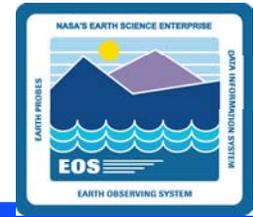
- **Distributed Computing Configuration Item (DCCI) (Cont.)**
 - **Mail Support Group** component
 - Provides electronic mail, with an interactive interface and an object-oriented application program interface
 - **Virtual Terminal** component
 - Provides operators the capability for remote logon from one ECS machine to another
 - **Cryptographic Management Interface (CMI)** component
 - Allows processes to obtain random passwords and gain access to Sybase
 - **Machine-to-Machine Gateway** component
 - Provides an automated search and order capability to allow the Science Investigator-Led Processing Systems (SIPS) to reprocess data externally from the ECS

Subsystems and CSCIs: CSS (Cont.)

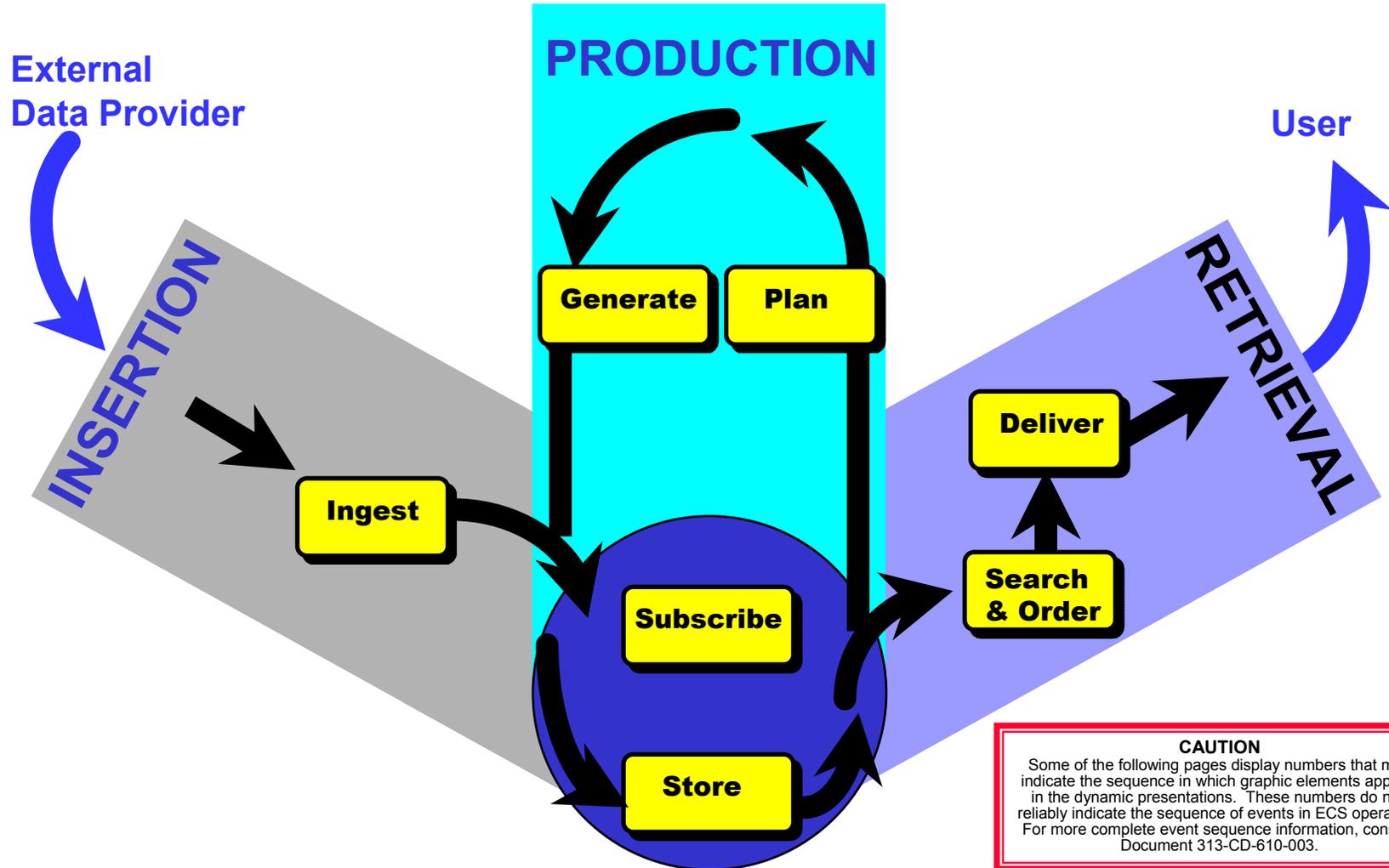


- **Distributed Computing Configuration Item (DCCI) (Cont.)**
 - **Domain Name Service (DNS) component**
 - Provides information about host names and addresses on a network by querying and answering queries
 - Performs naming between hosts within the local administrative domain and across domain boundaries
 - *Note:* The external DNS is located on the Firewall in ISS
 - **Infrastructure Library component**
 - Provides a set of services to facilitate the implementation of client-server applications; includes Process Framework (PF), Service Request Framework (SRF), Message Passing, Universal References (URs), Event Logging, Service Locator, Time Service, and Failure Recovery Framework
 - **Configuration Registry Server component**
 - Provides a single interface to retrieve configuration attribute-value pairs for ECS servers from the Configuration Registry Database, via Sybase Server

Subsystems and CSCIs: CSS (Cont.)

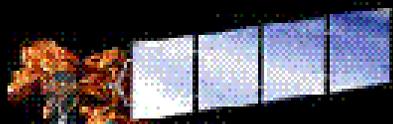


ECS Operational Functioning

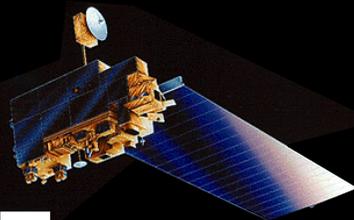


CAUTION
Some of the following pages display numbers that may indicate the sequence in which graphic elements appear in the dynamic presentations. These numbers do not reliably indicate the sequence of events in ECS operation. For more complete event sequence information, consult Document 313-CD-610-003.

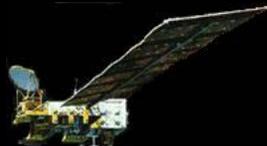
ECS Release 6 Focus



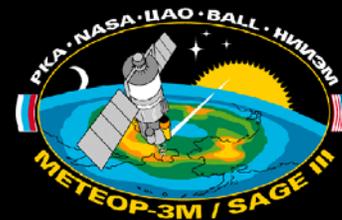
Landsat-7



Terra



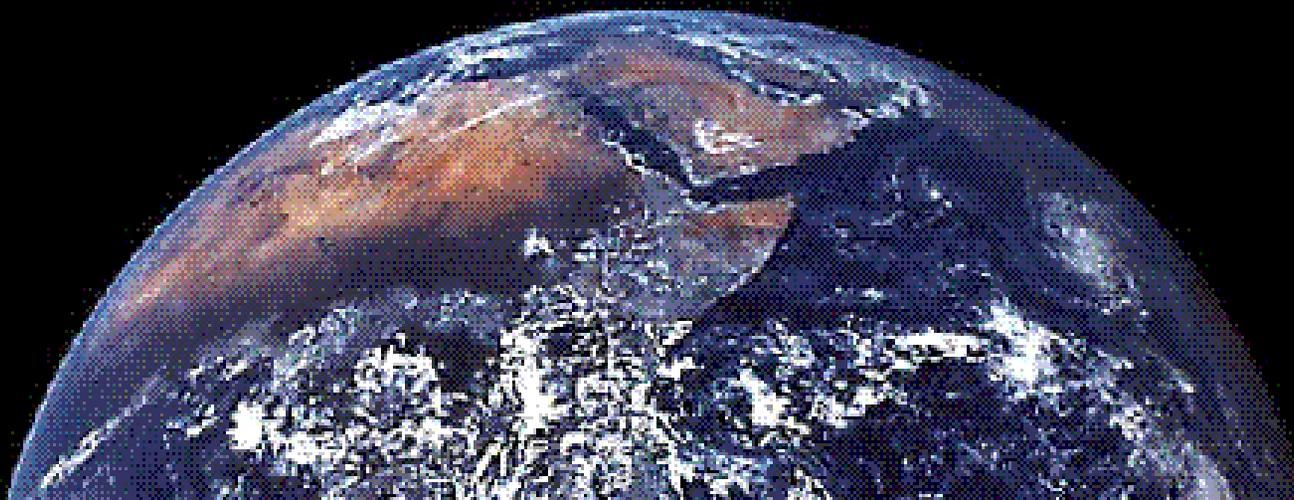
Aqua



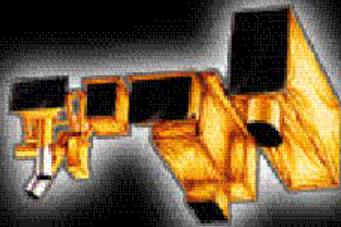
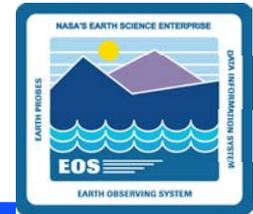
METEOR - SAGE III



NCEP - DAO



ASTER Scenario



ASTER

- 1 DAR Support
- 2 Chaining
- 3 Expedited Data

ASTER Goals

- *ASTER DAR Tool Usage*
- *On-Demand Processing and Chaining*
- *SCF QA Metadata Update Workaround*
- *Simplified ASTER Expedited Data Support*
- *Data Tape Ingest*

ASTER Preconditions

ASTER ESDTs Inserted into ECS

-AST Anc, AST Exp, AST L1A, AST L1BT, AST 09T, AST 04, AST 05, AST 08, GDAS0ZFH

ASTER PGEs passed SSI&T and installed

- ACT, ETS, BTS

Ancillary data inserted into Data Server

ASTER Scenario: DAR Support

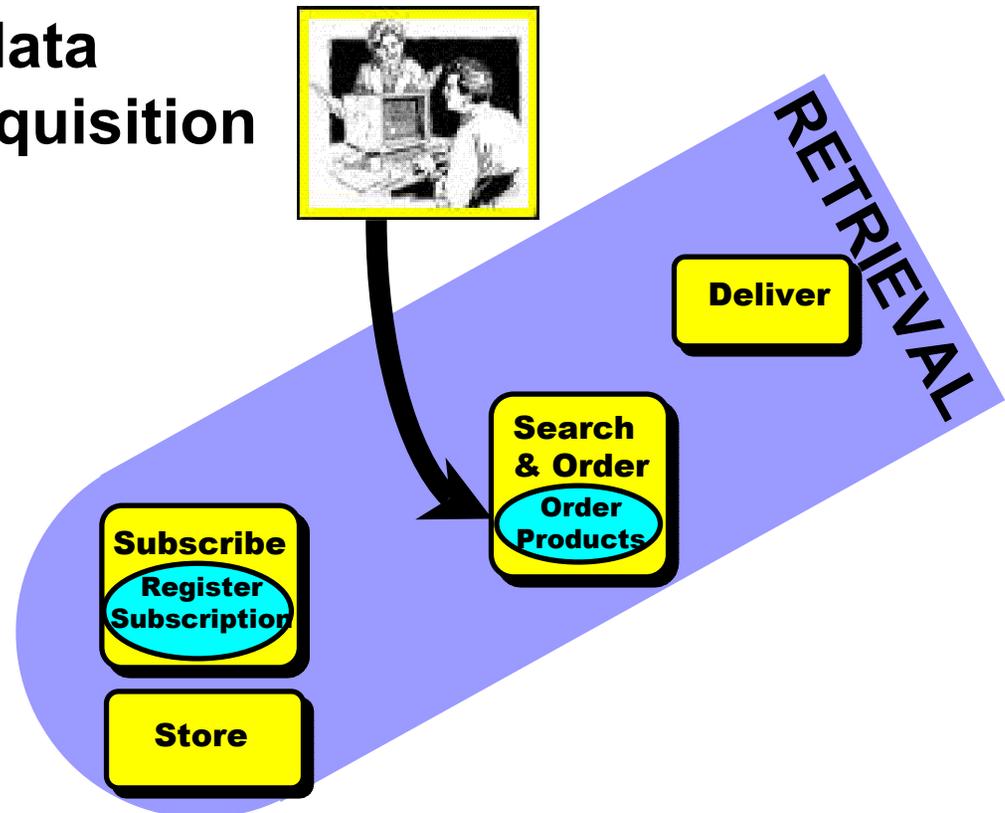


DAR Submission Data Subscription On-Demand Request

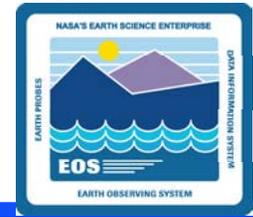
DAR Support



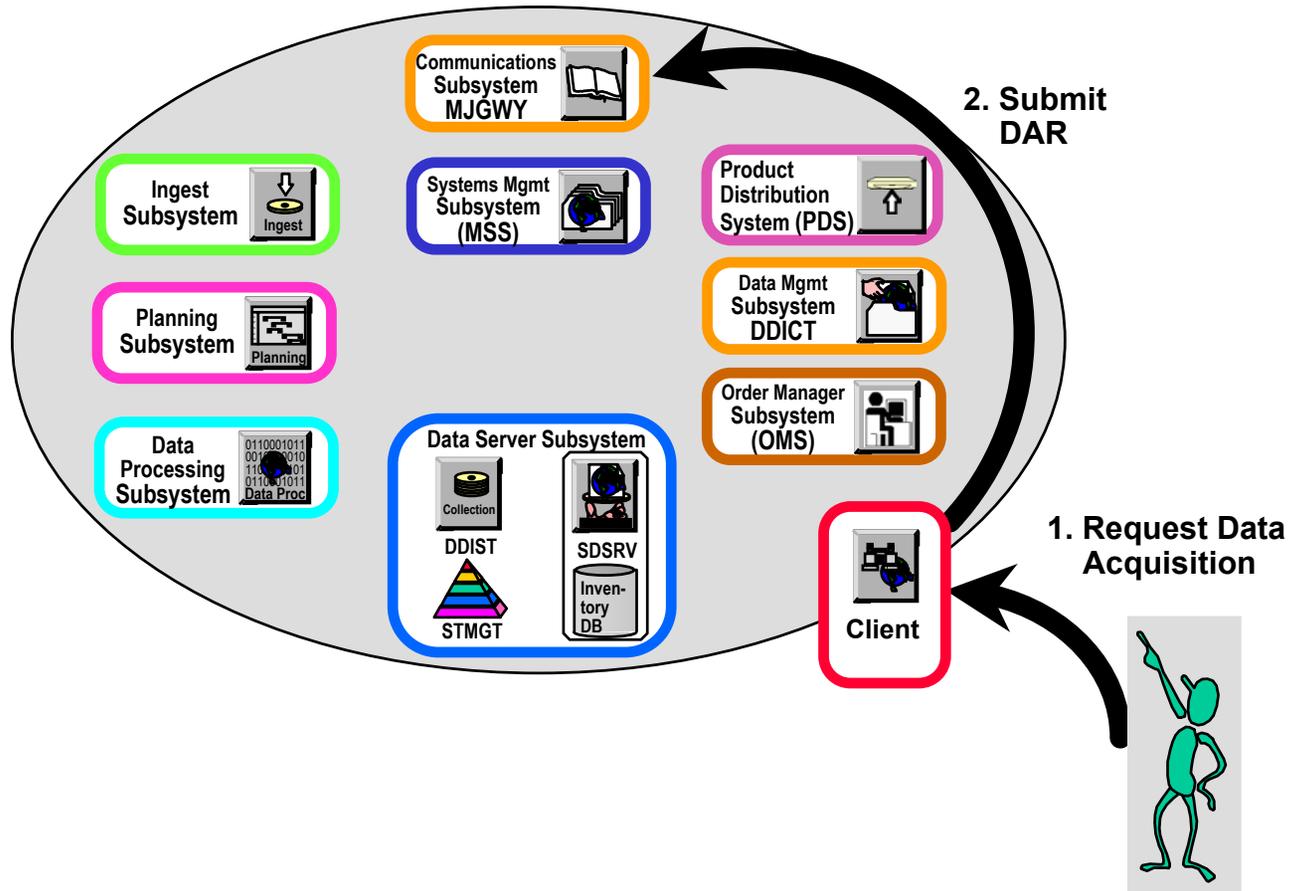
ASTER Scientist decides to request ASTER data requiring a Data Acquisition Request



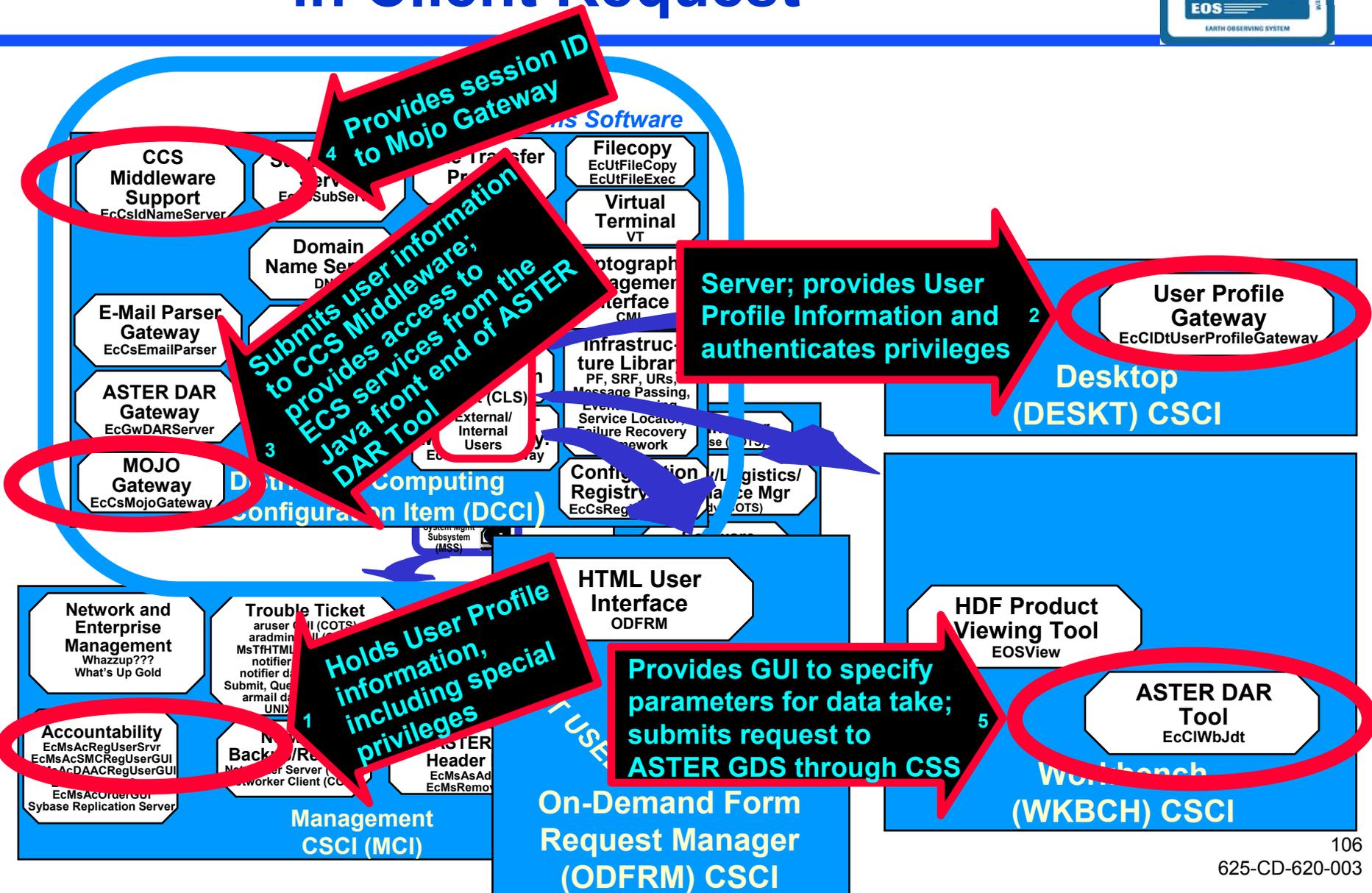
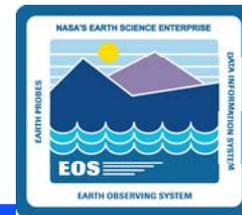
ASTER: Client Request Process



ASTER Scientist determines an area of interest. The scientist decides to request an ASTER data take over that area, using the ASTER DAR Tool.



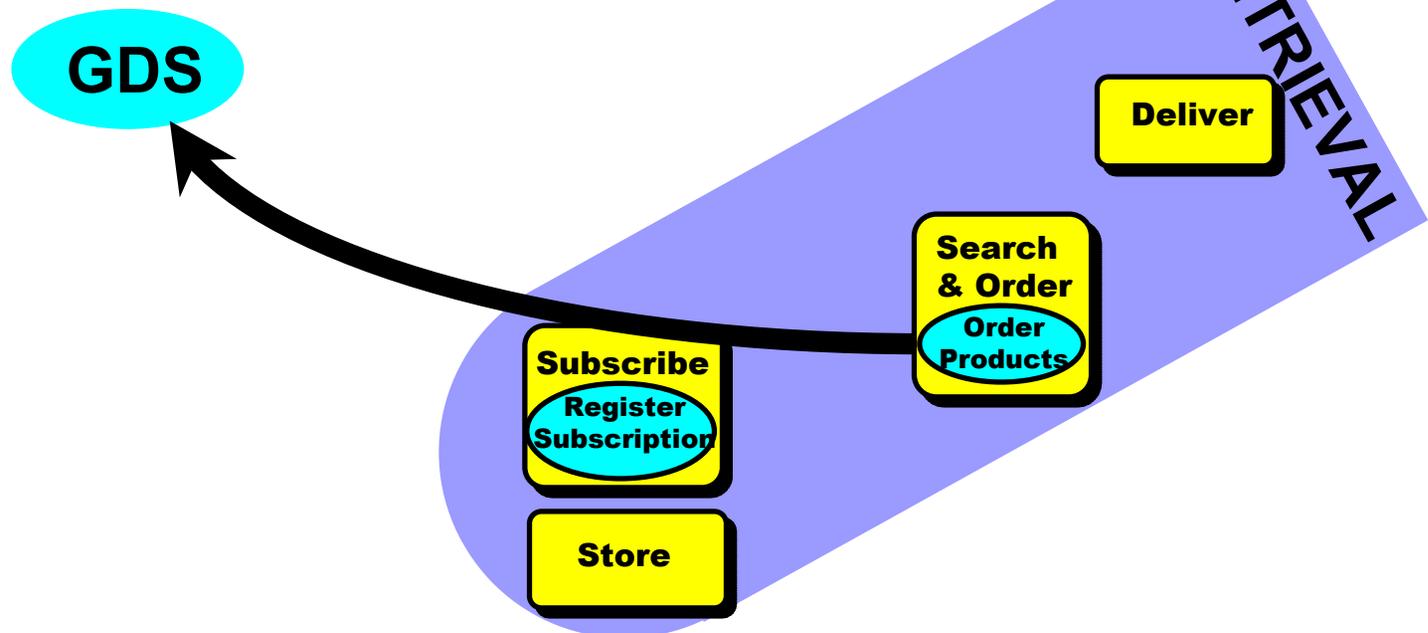
ASTER: CSCI/Component Role in Client Request



DAR Support (Cont.)



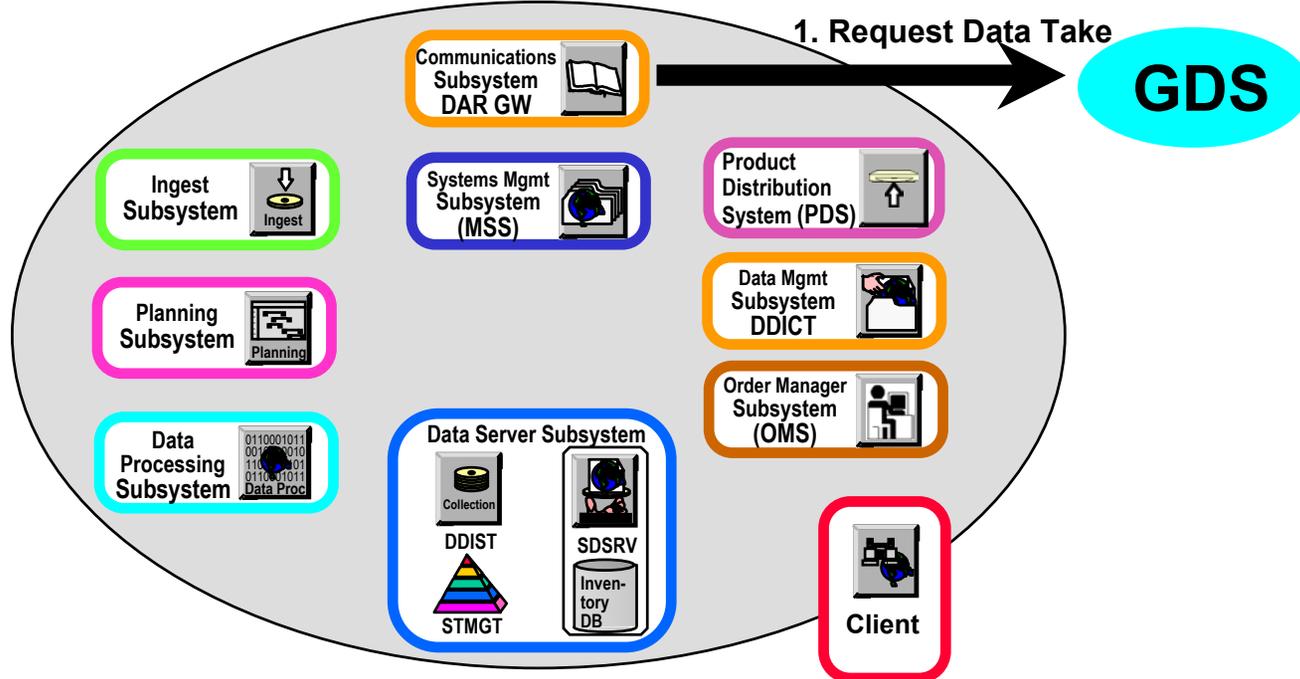
ECS submits DAR to ASTER Ground Data System (GDS) in Japan receiving a DARid in return



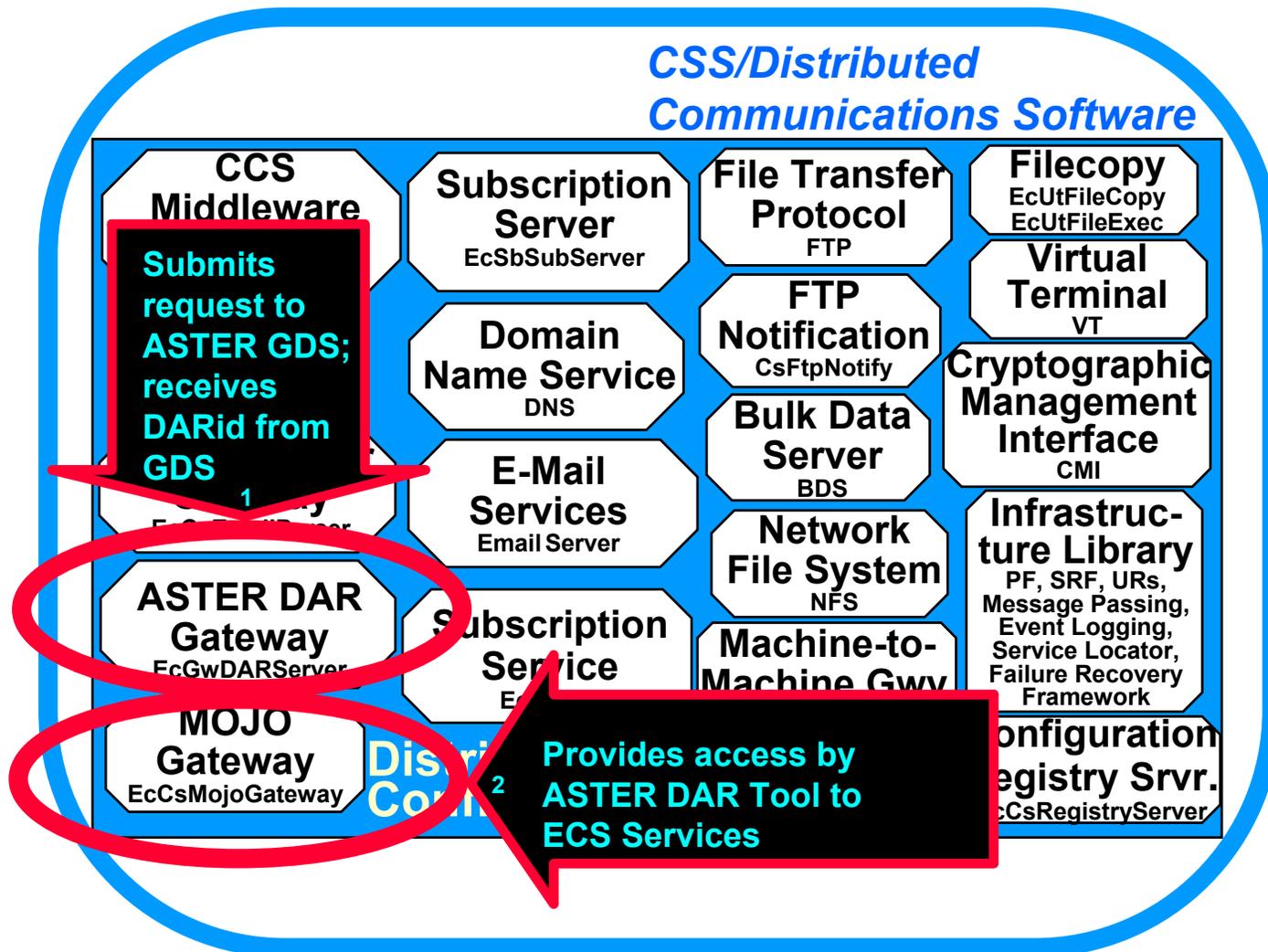
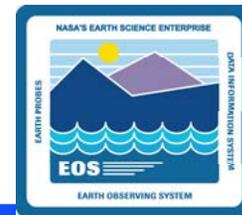
ASTER: Request Data Take Process



ASTER DAR Gateway submits a request for a data take over the area of interest. GDS responds with a DARid.



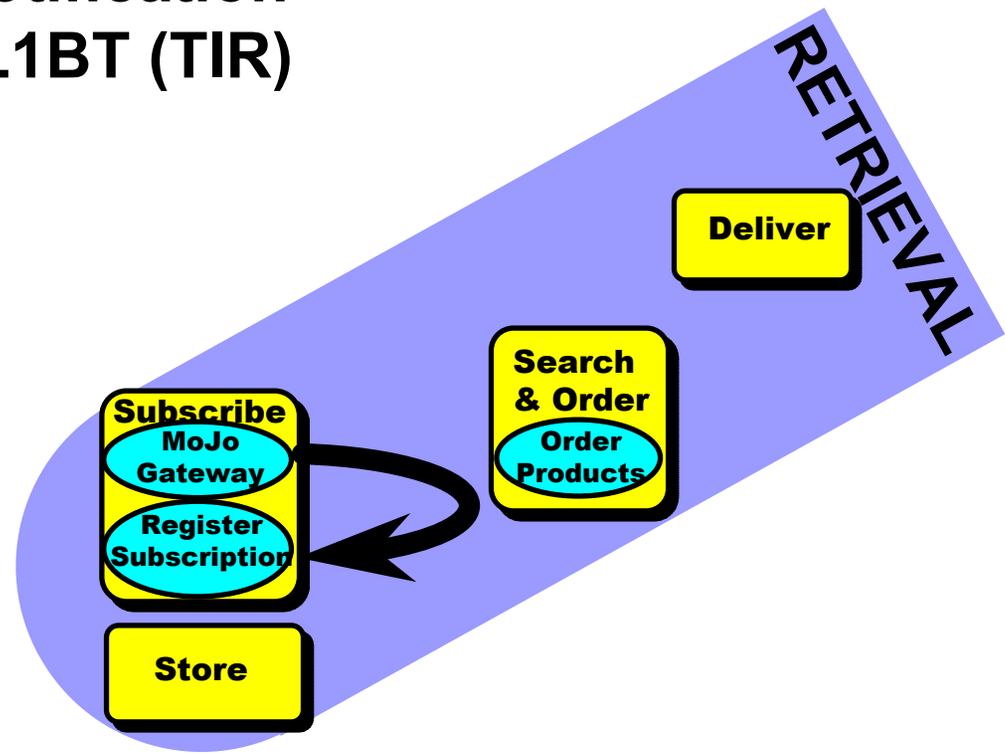
ASTER: CSCI/Component Role in Data Take Request



DAR Support (Cont.)



Subscription is submitted on behalf of user for notification on receipt of AST_L1BT (TIR) data

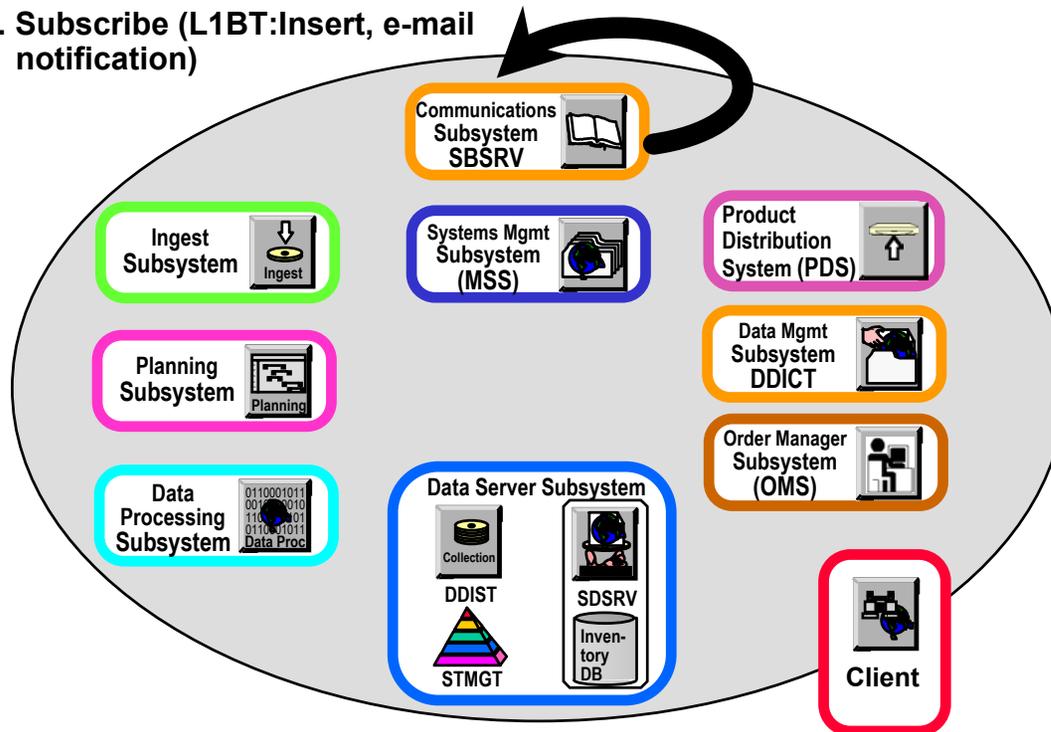


ASTER: Submit Subscription Process

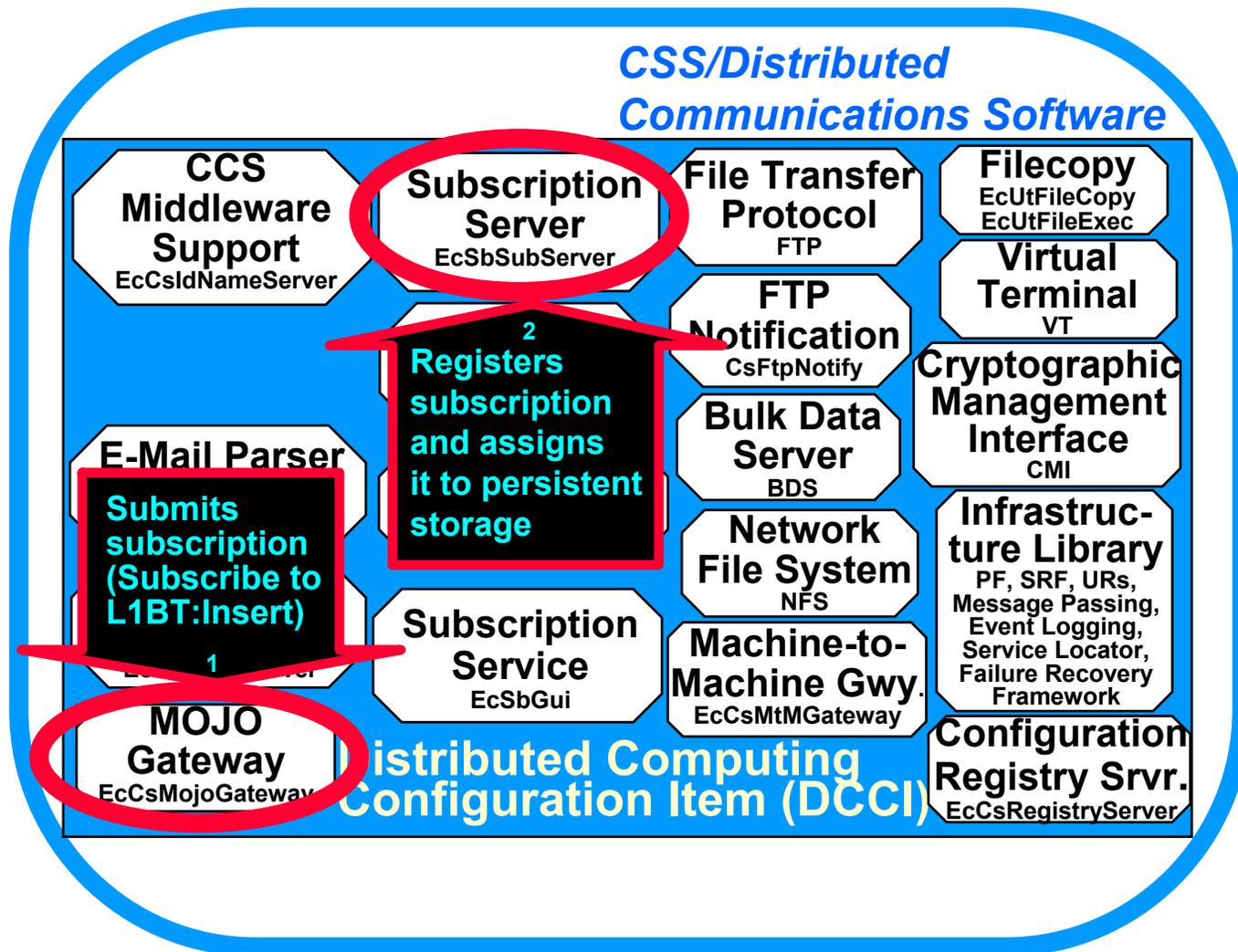


MoJo Gateway submits subscription for notification on the occurrence of AST_L1BT:Insert event, qualified with the DARid.

1. Subscribe (L1BT:Insert, e-mail notification)



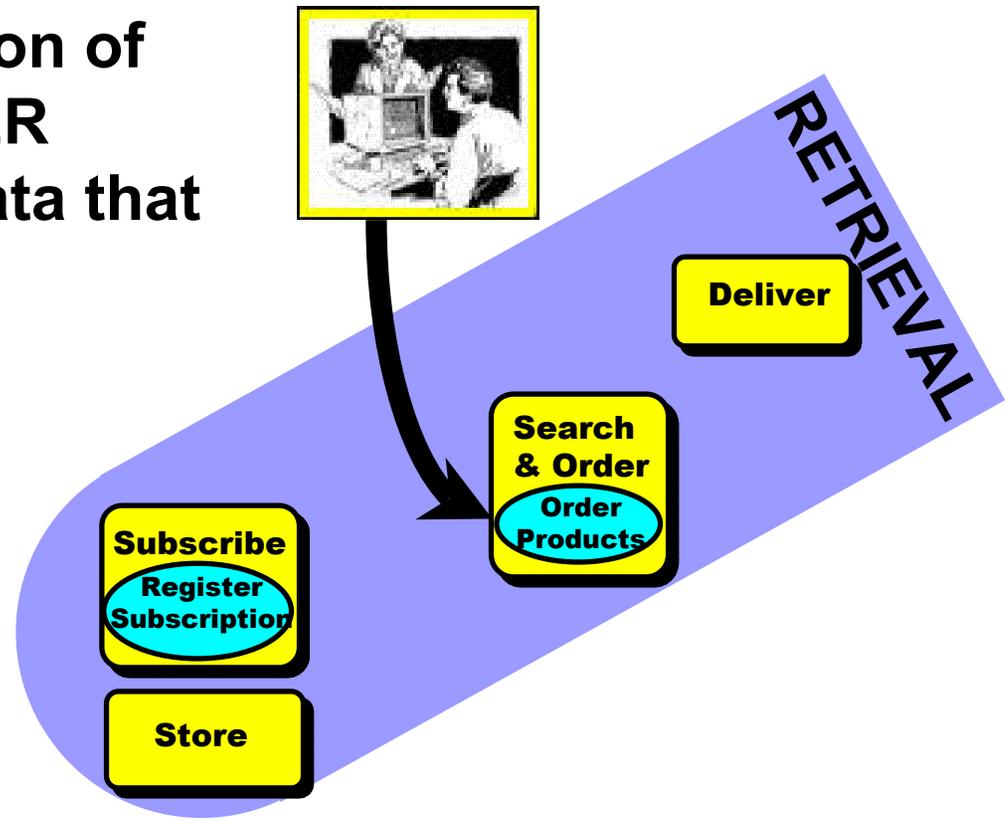
ASTER: CSCI/Component Role in Subscription Submission



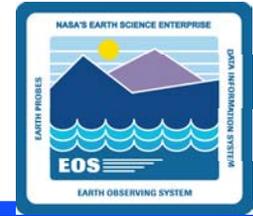
DAR Support (Cont.)



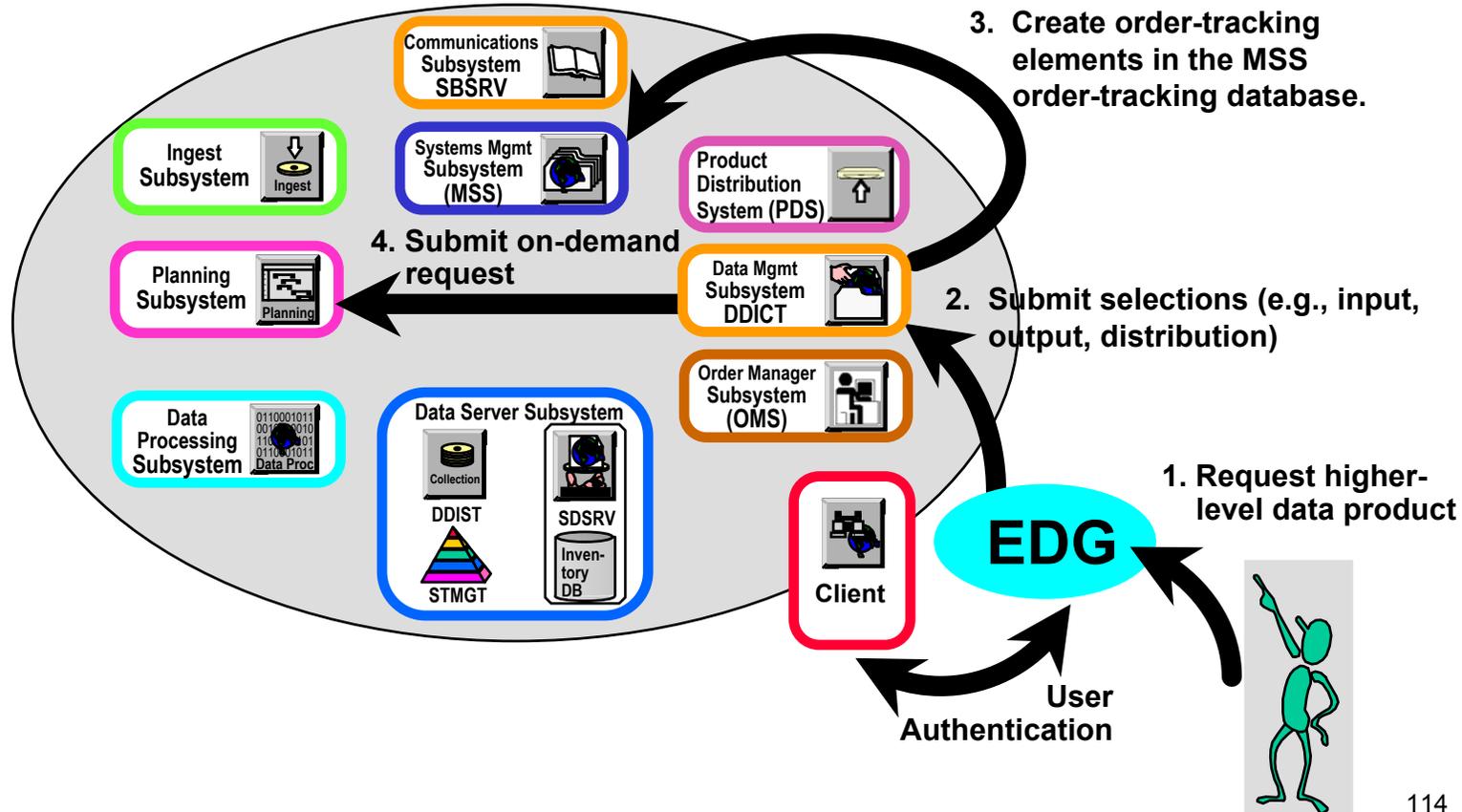
ASTER Scientist decides to request production of a higher level ASTER product from the data that are to be collected



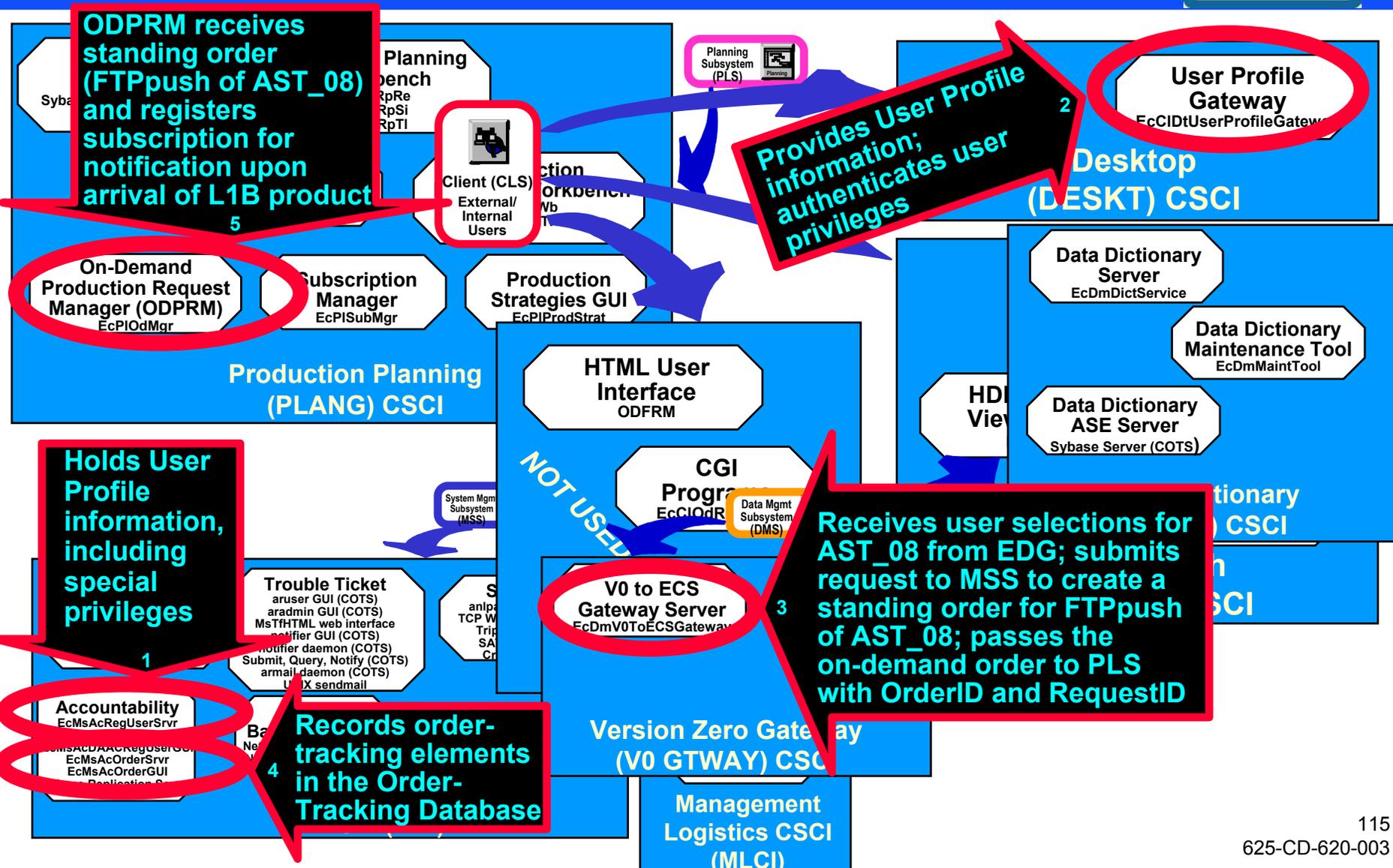
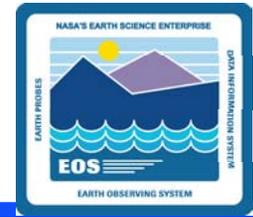
ASTER: On-Demand Data Processing Request Process



ASTER Scientist wants AST_08 (L2 Surface Temperature product) based on the AST_L1BT (TIR - Thermal InfraRed - product) resulting from GDS initial processing of the data collected for the DAR, and uses the EOS Data Gateway (EDG) Web Client to submit the request.



ASTER: CSCI/Component Role in On-Demand Request

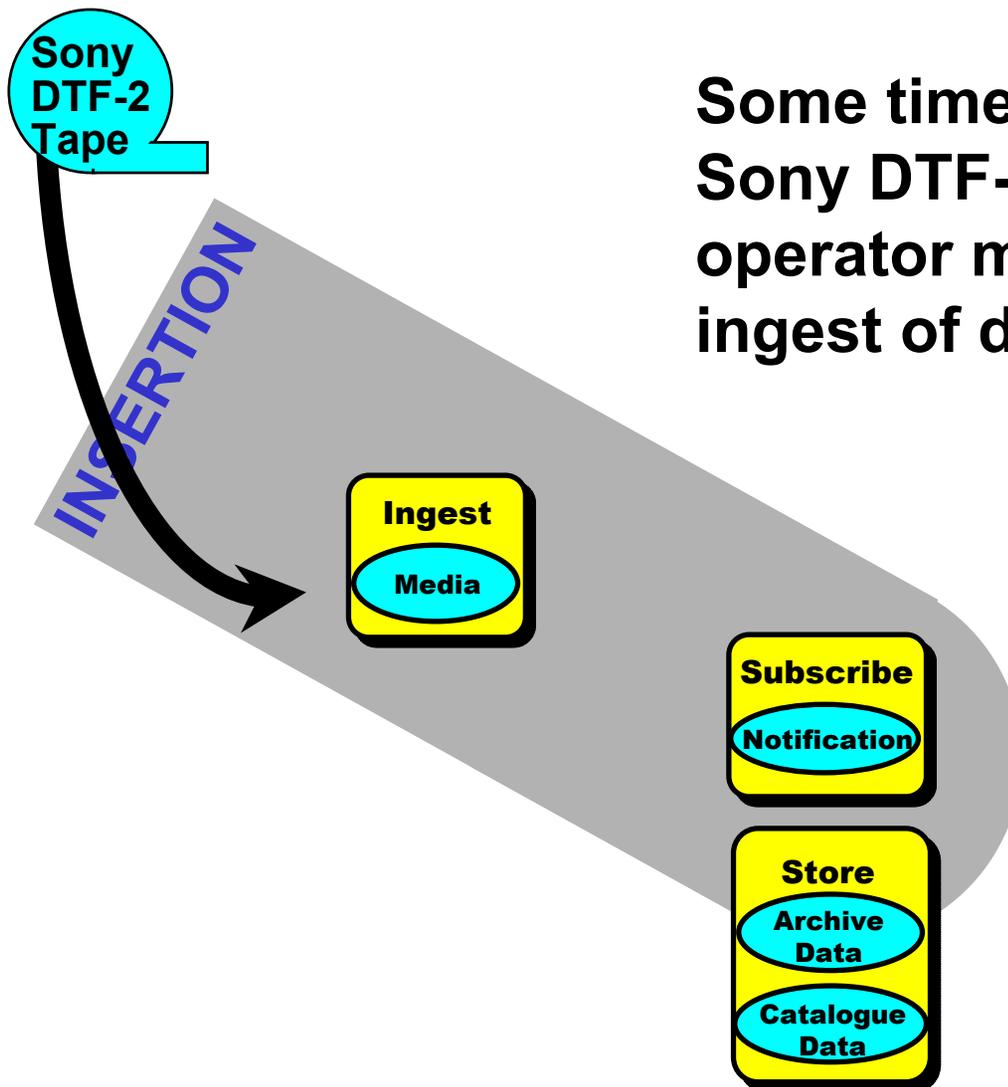


ASTER Scenario: Chaining and On-Demand Production



Data Insertion
Data Notification
On-demand Production
Standing Order Delivery
QA Update

Chaining and On-Demand Production (Cont.)

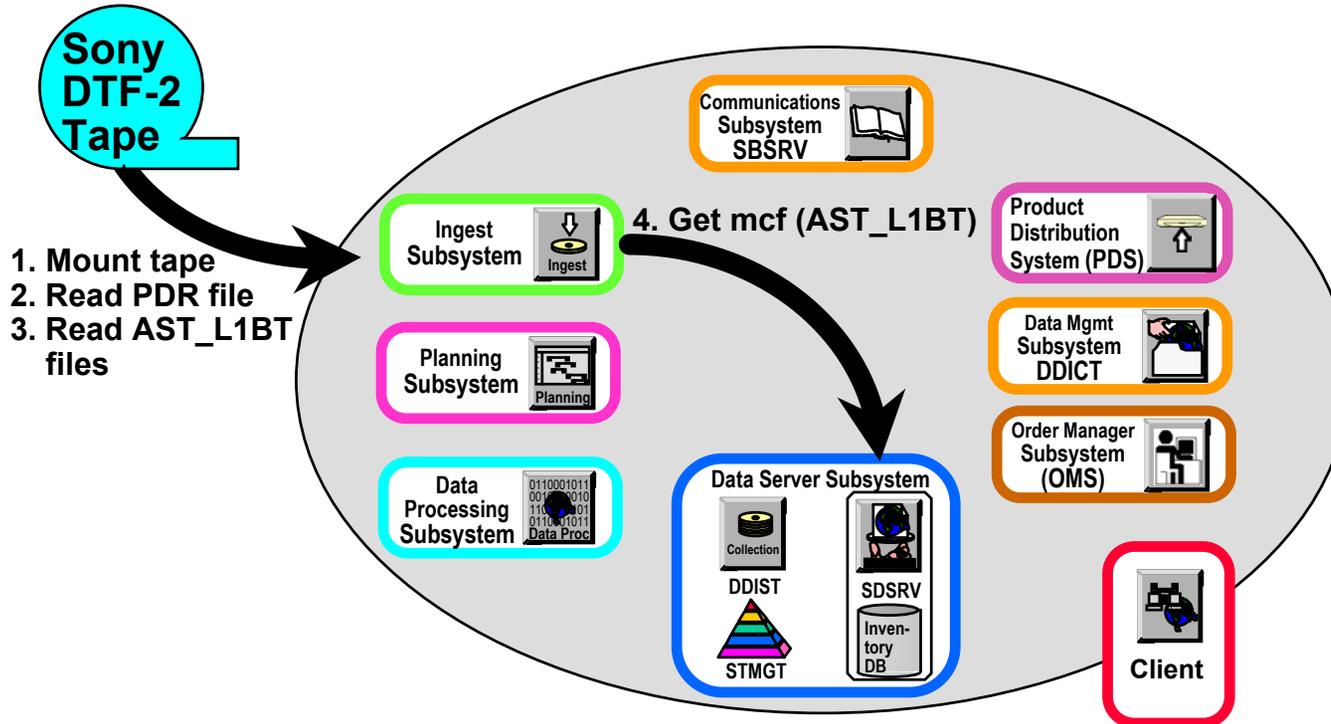


Some time later, after receiving Sony DTF-2 tape from GDS, operator mounts tape and begins ingest of data

ASTER: DTF-2 Tape Ingest Process



After receiving Sony DTF-2 tape in a shipment, DAAC Operator mounts tape and begins ingest activities. Tape contains AST_L1BT (L1B TIR) data.



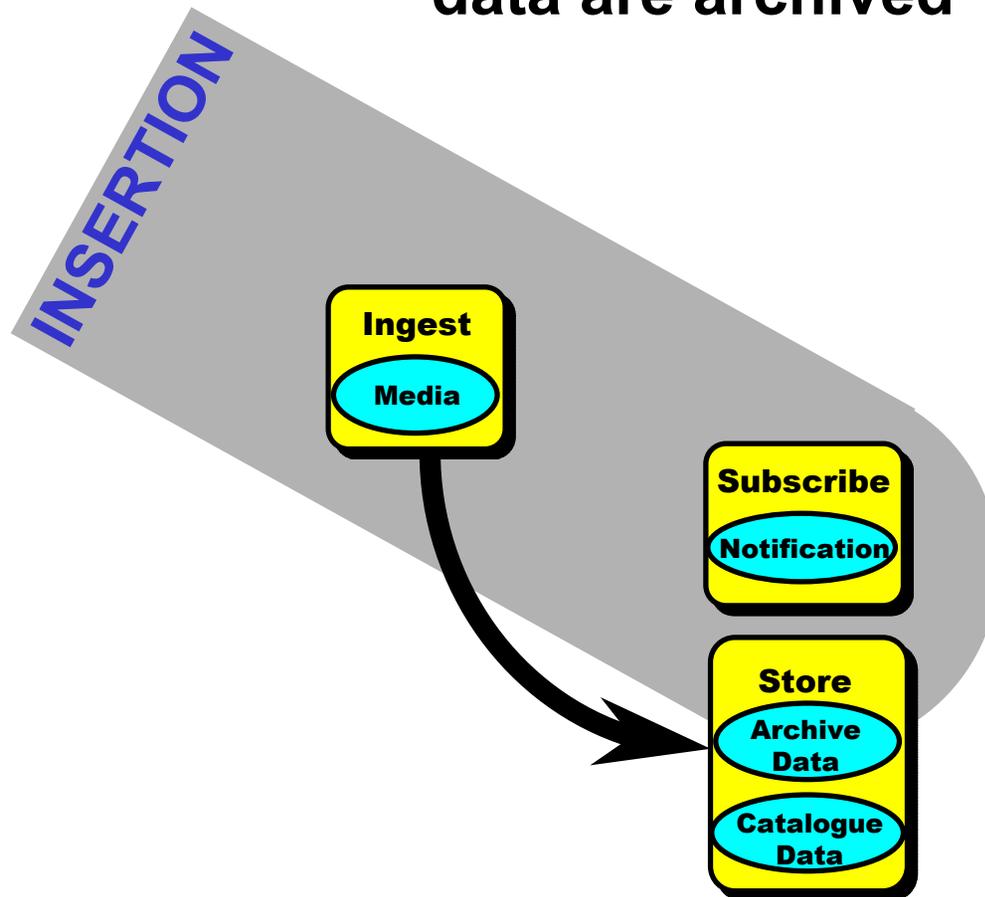
ASTER: CSCI/Component Role in Ingest DTF-2 Tape Operations



Chaining and On-Demand Production (Cont.)



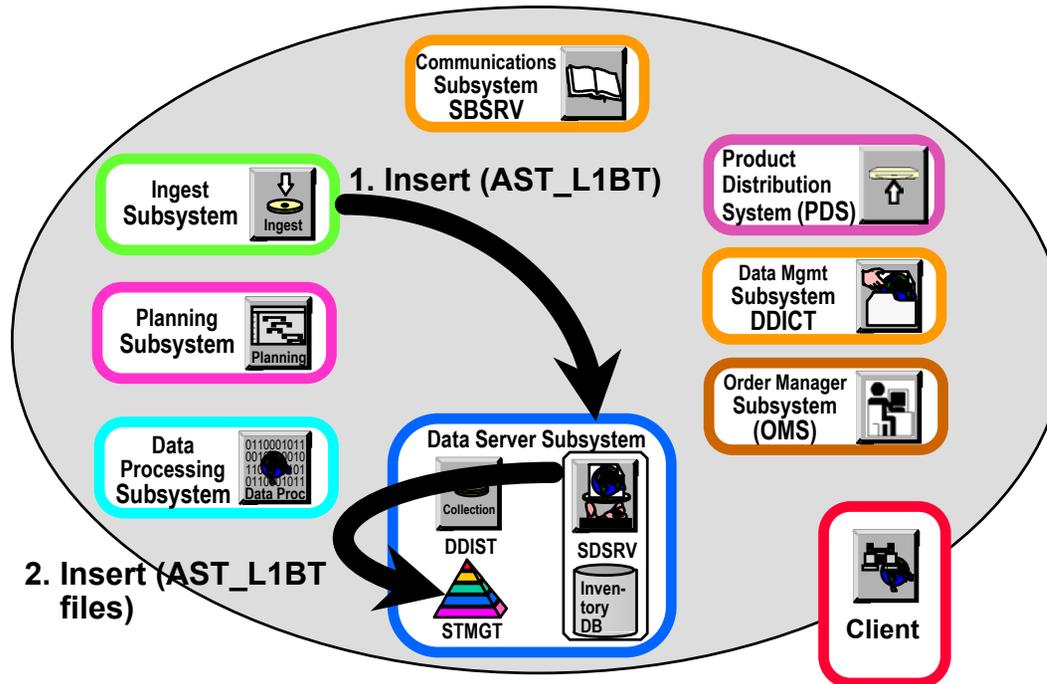
Ingested AST_L1BT
data are archived



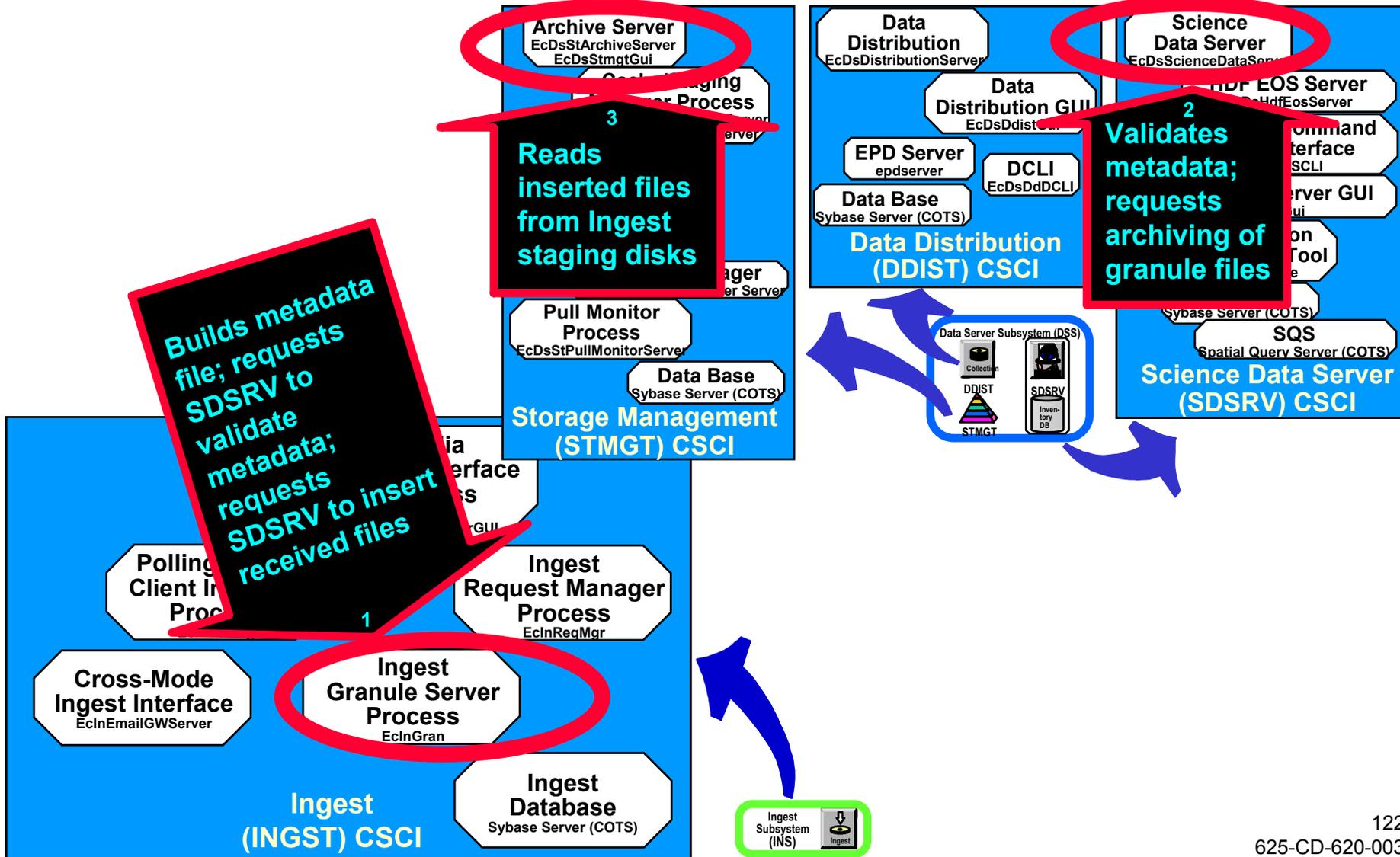
ASTER: Ingest Archive Insertion Process



Archive AST_L1BT (L1B TIR) data granules.



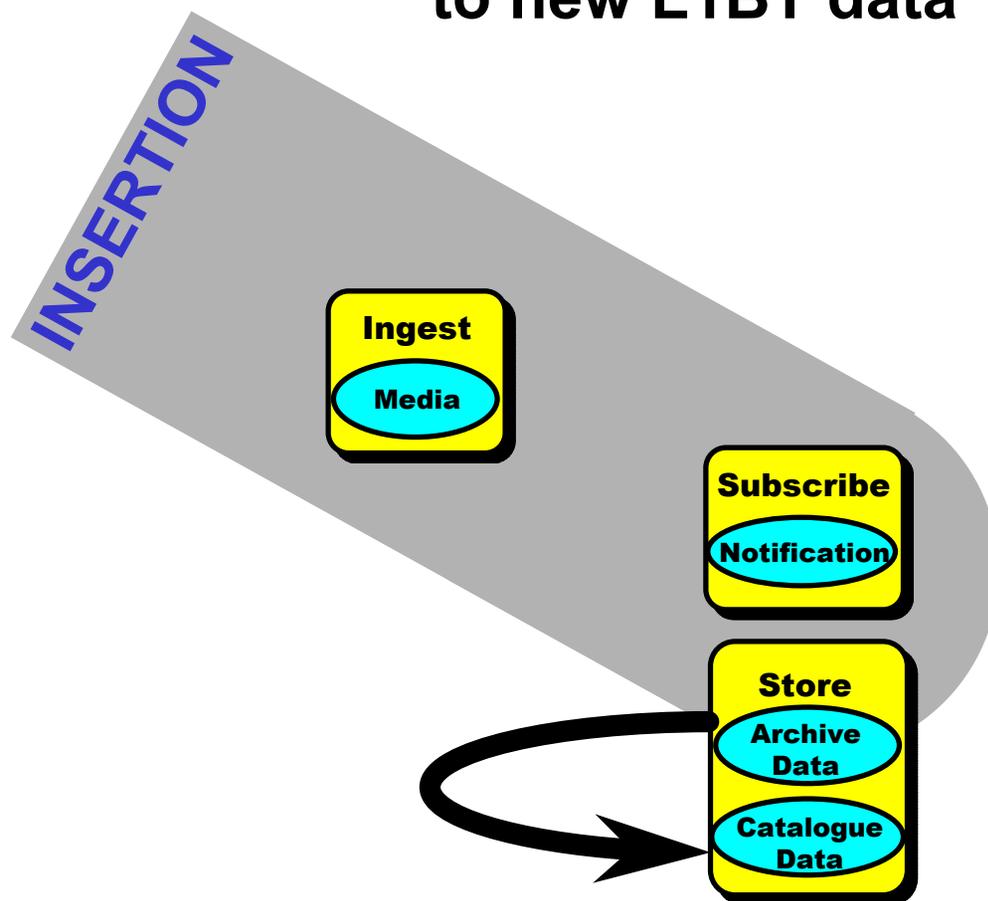
ASTER: CSCI/Component Role in Ingest Archive Insertion



Chaining and On-Demand Production (Cont.)



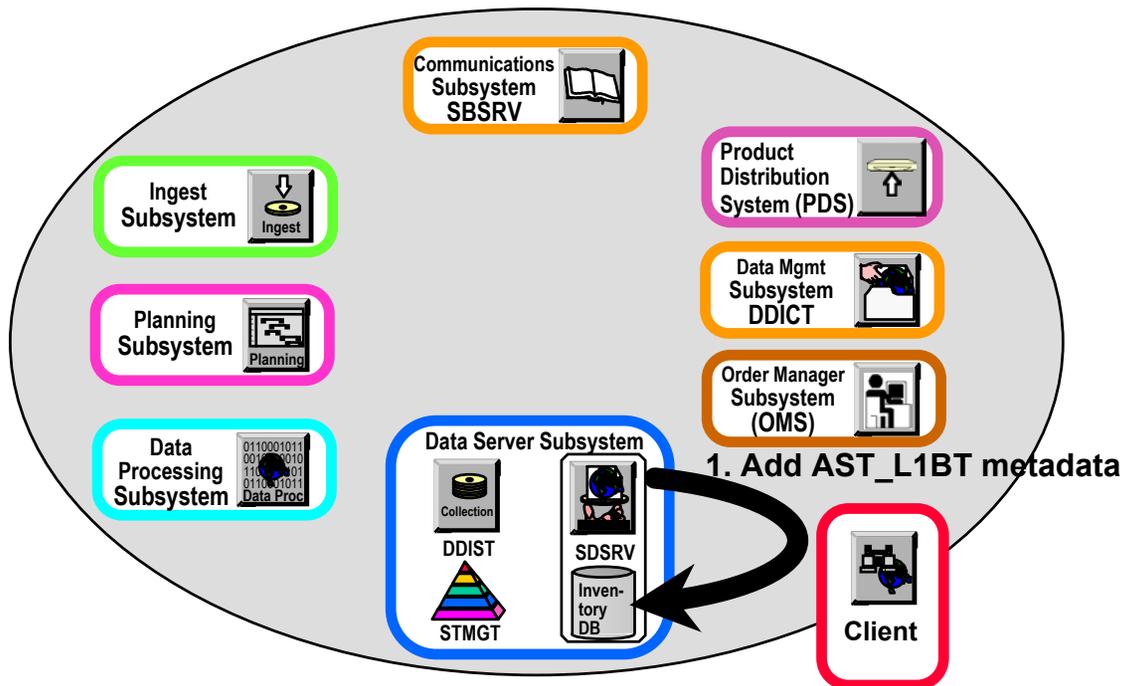
Update catalogue with reference to new L1BT data



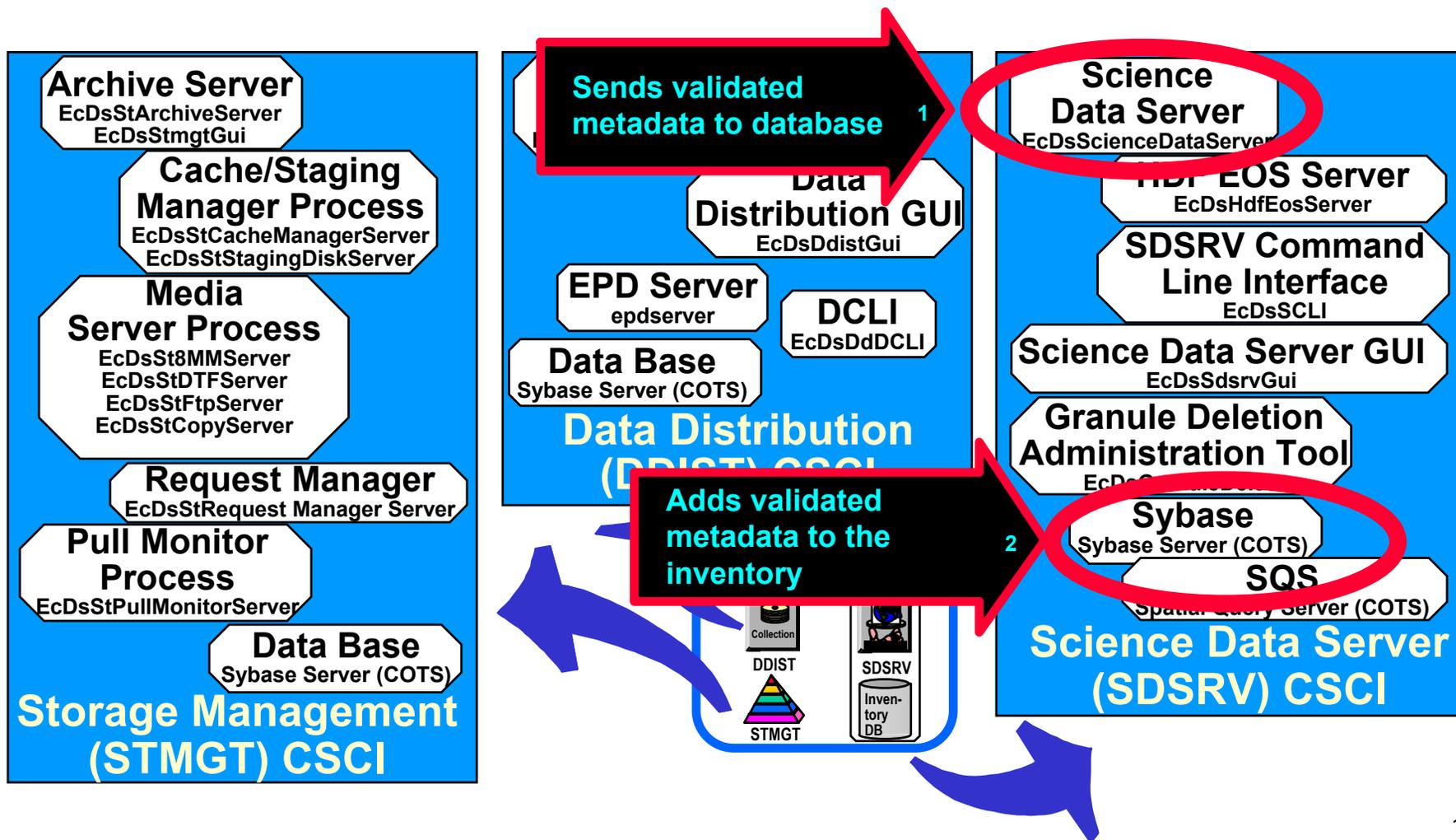
ASTER: Inventory (Metadata) Update Process



Add metadata for AST_L1BT (L1B TIR) data granules to the Sybase/SQS database.



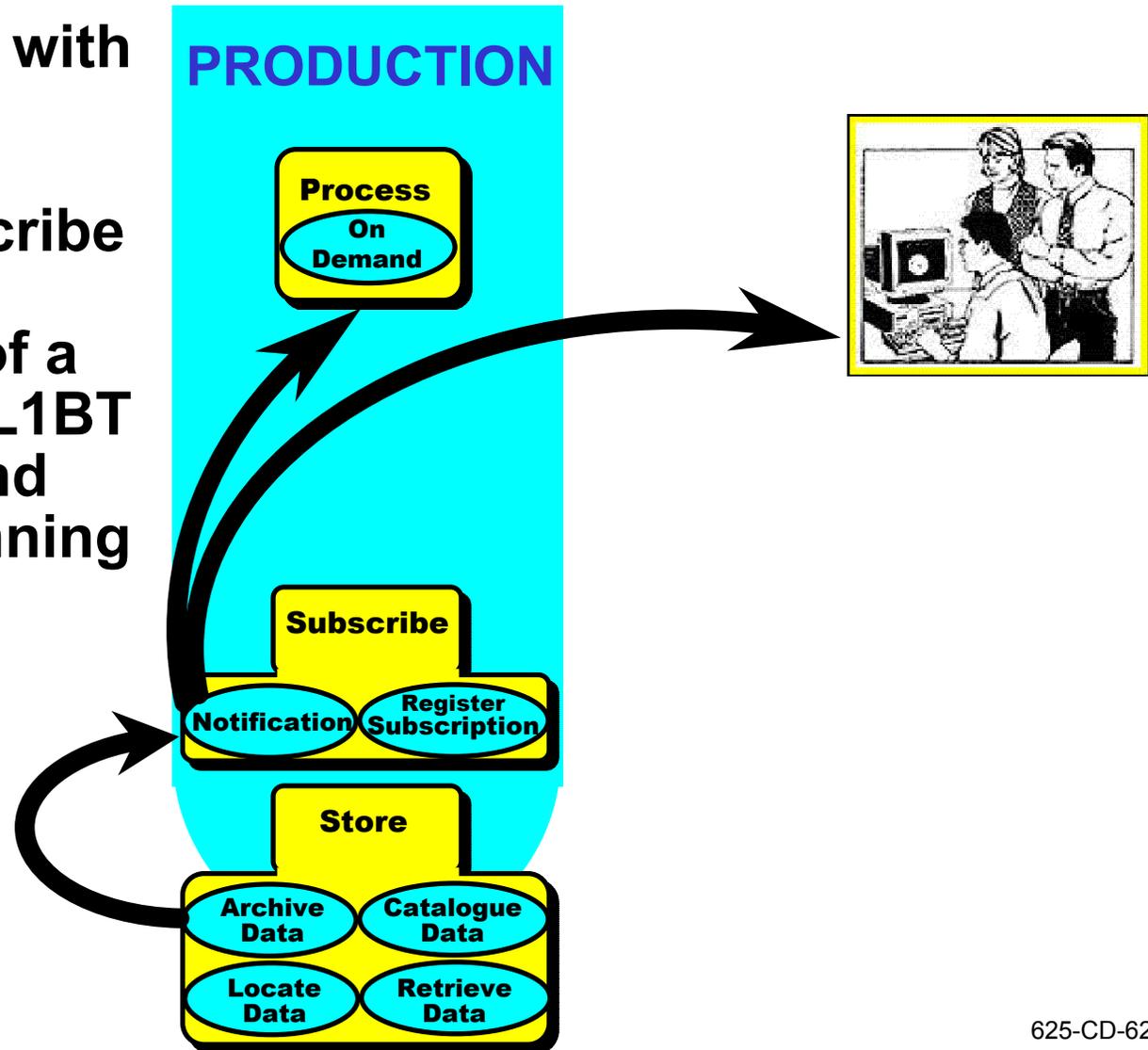
ASTER: CSCI/Component Role in Inventory (Metadata) Update



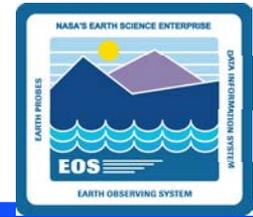
Chaining and On-Demand Production (Cont.)



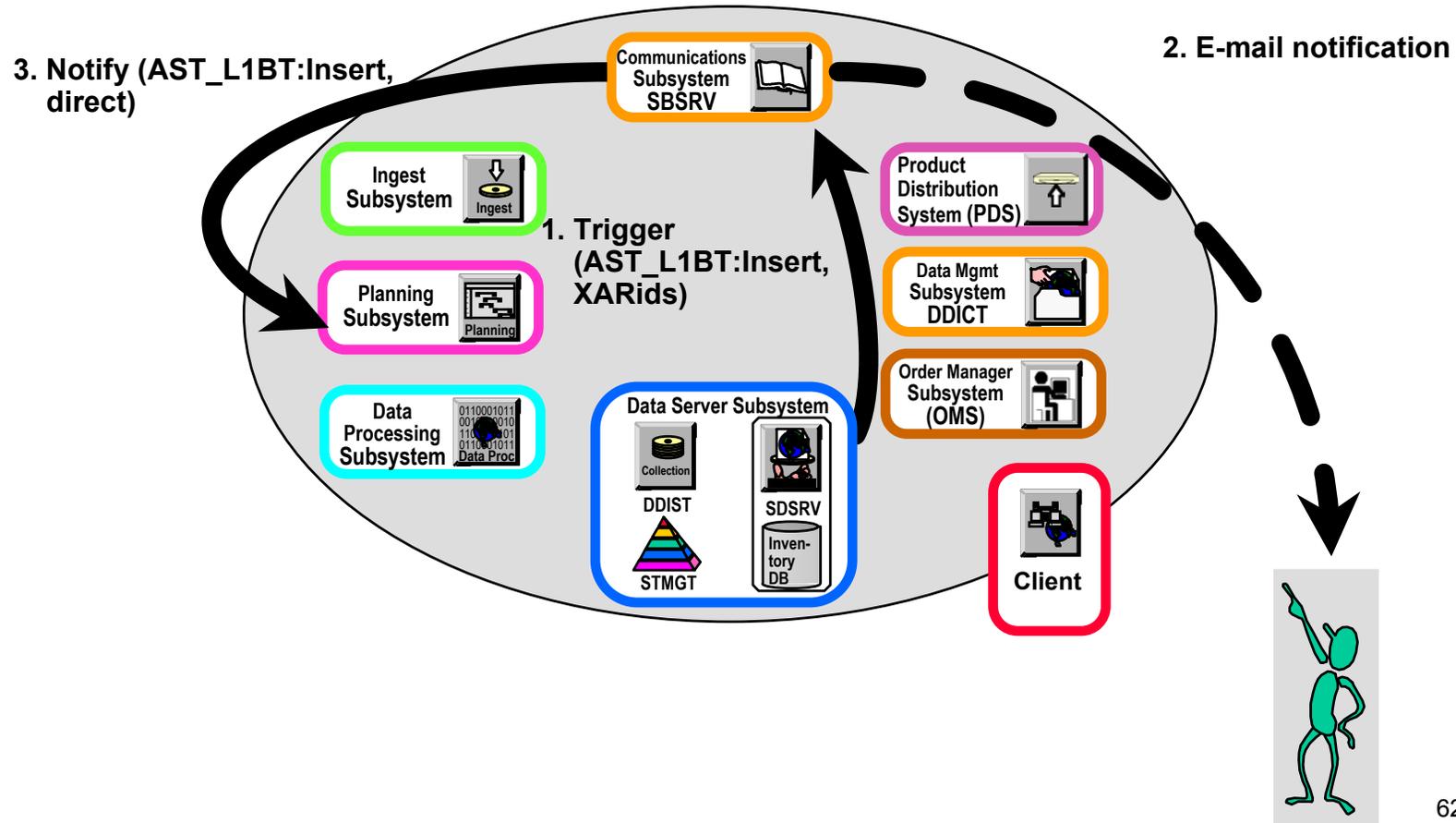
Insert terminates with an insert event notification to Subscribe. Subscribe e-mails ASTER Scientist notice of a completed AST_L1BT granule insert, and also notifies Planning



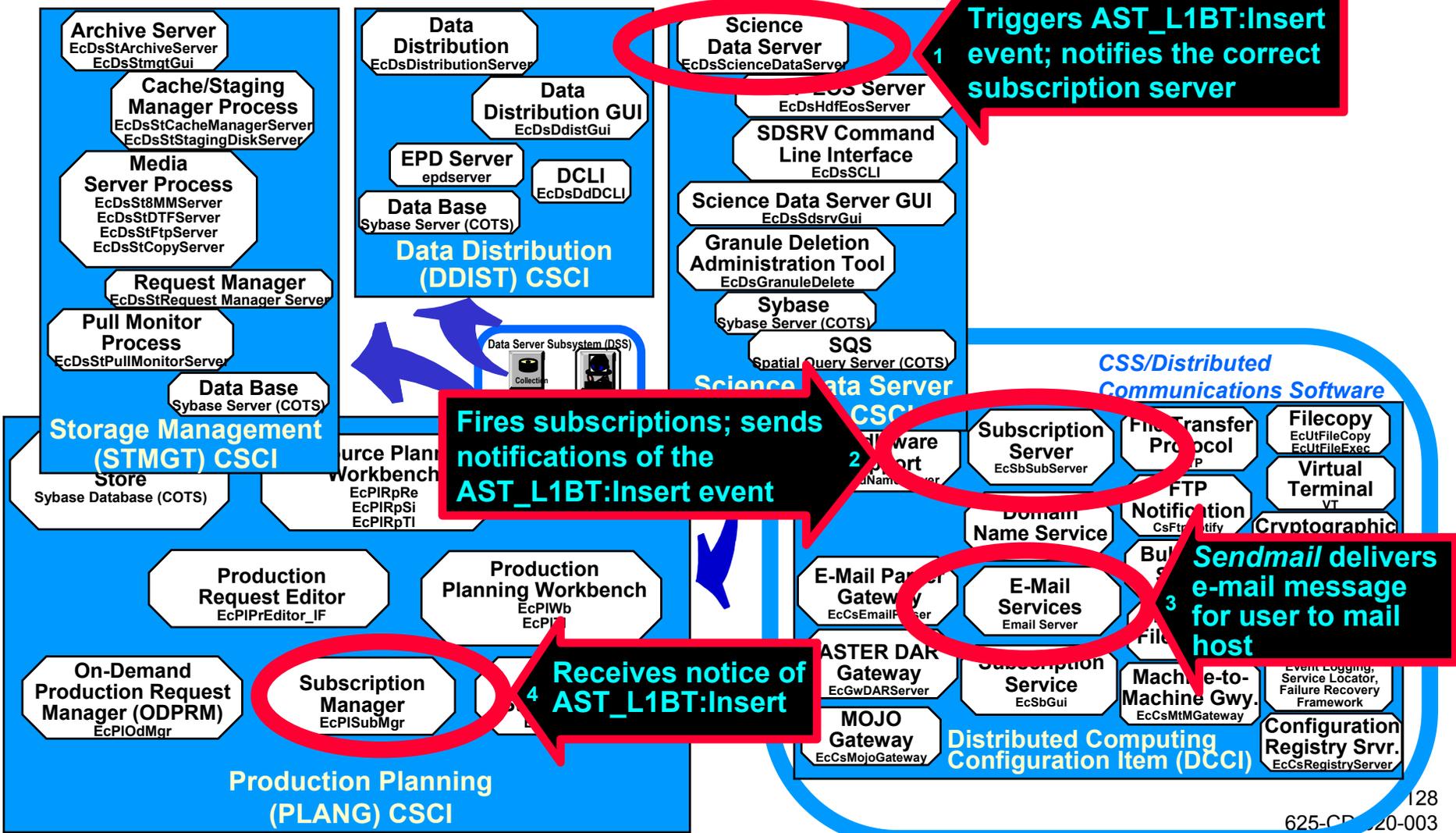
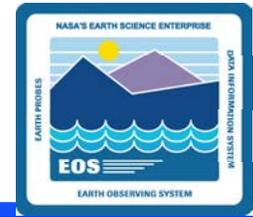
ASTER: Event Notification Process



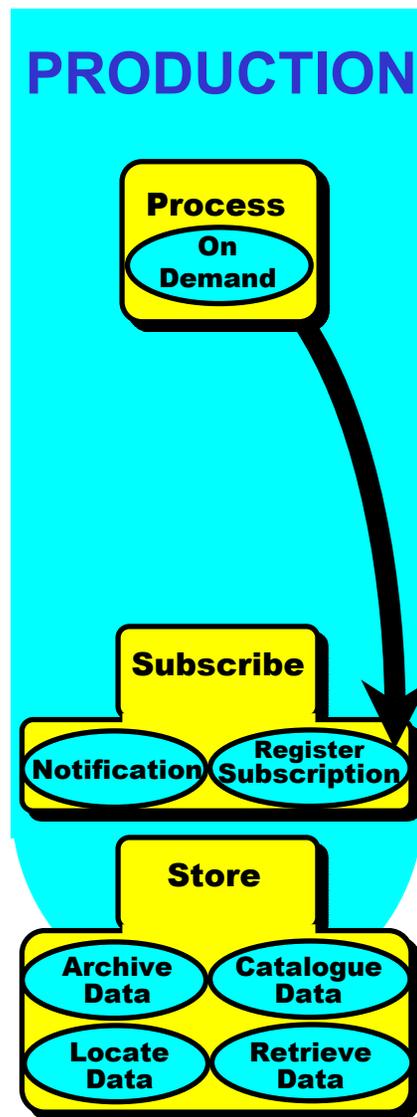
Notify all AST_L1BT:Insert event subscribers whose DARid numbers are matched with the ingested granules.



ASTER: CSCI/Component Role in Event Notification

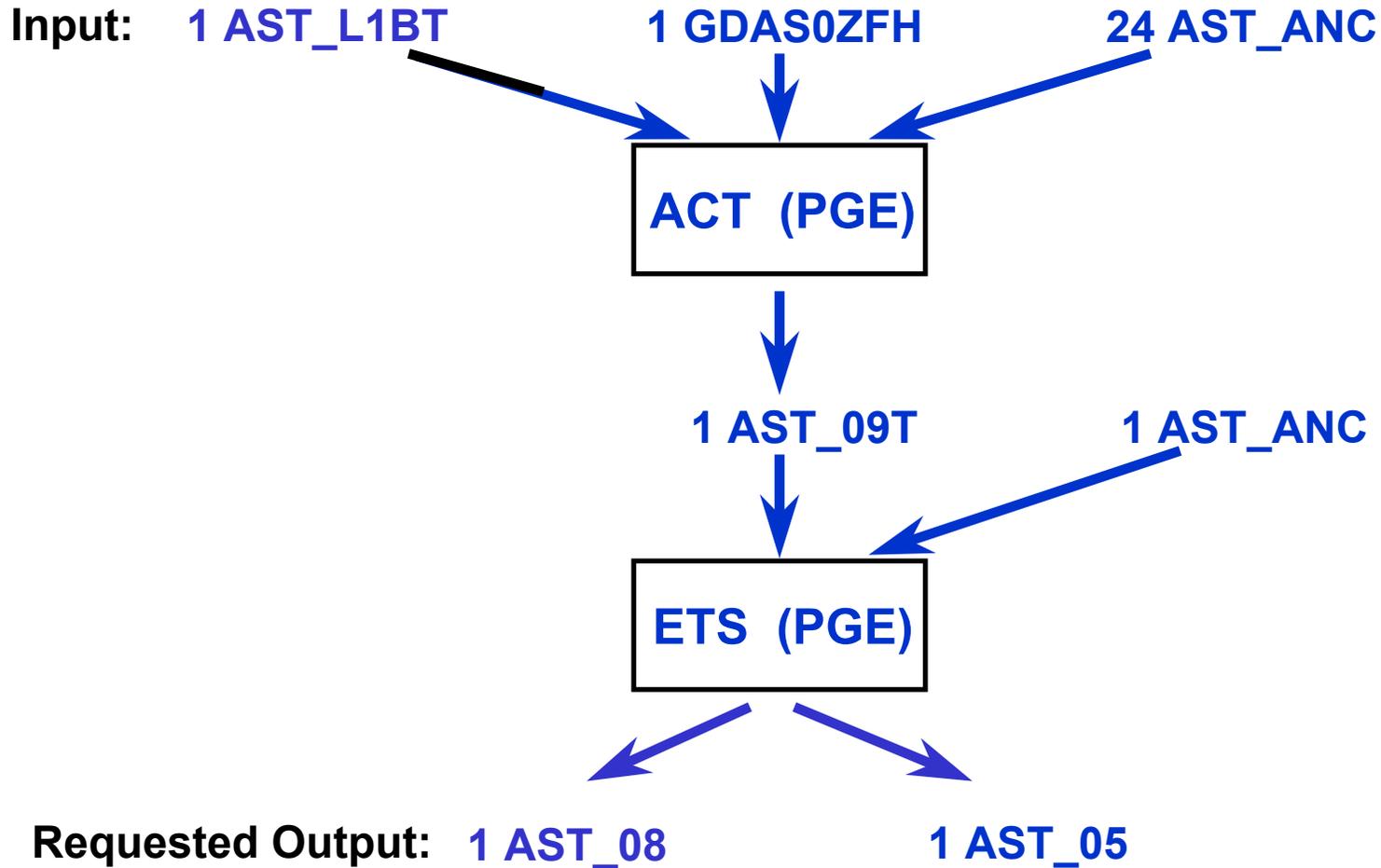


Chaining and On-Demand Production (Cont.)

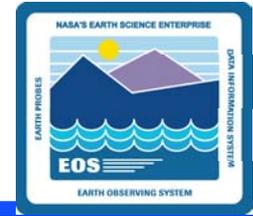


Planning recognizes the need to run ACT PGE before ETS. Creates data processing requests (DPRs) for ACT and ETS, and registers subscriptions for input products that are not available in the archive.

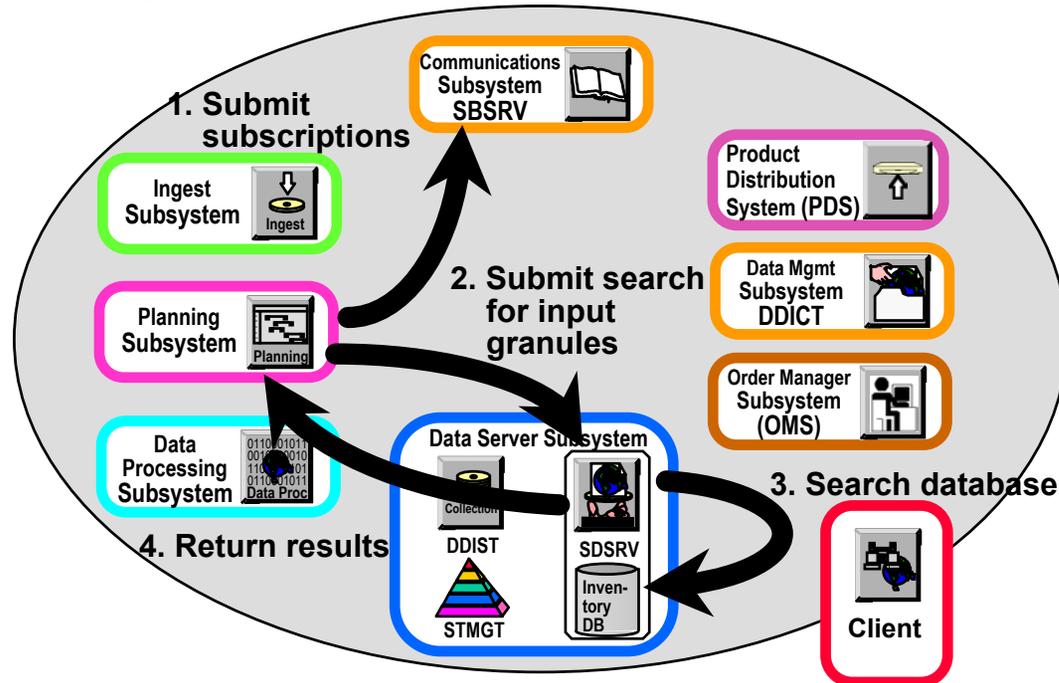
ASTER: PGE Chaining



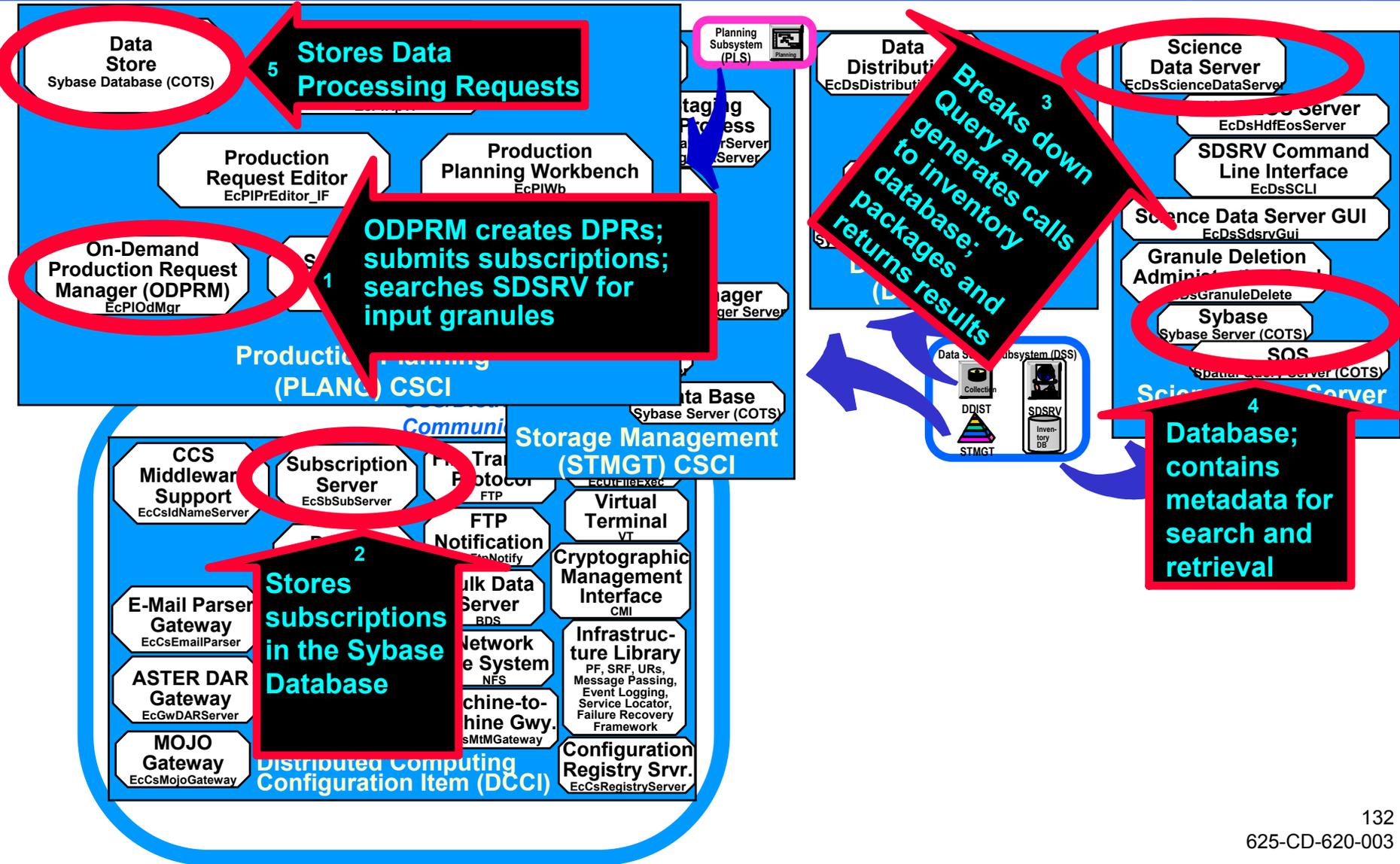
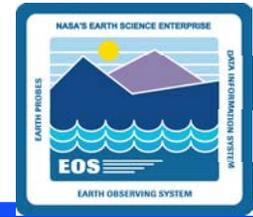
ASTER: Sequenced Production Request Process



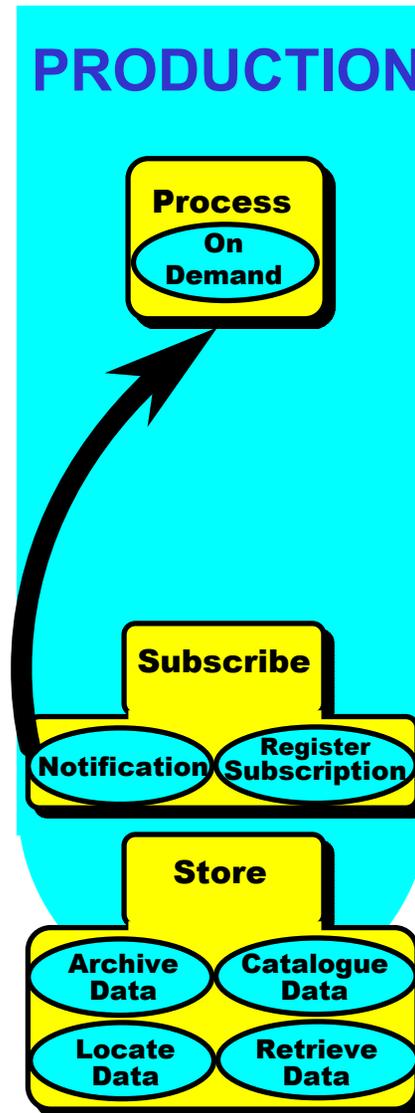
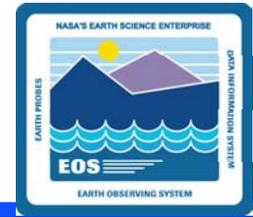
Planning recognizes that, in order to run ETS algorithm on AST_L1BT (L1B TIR), ACT algorithm must be run first. Planning creates DPRs for ACT and ETS, with the AST_09T (L2 Surface Radiance TIR) output feeding the ETS algorithm, submitting subscriptions for data not available in the archive.



ASTER: CSCI/Component Role in Sequenced Production Request



Chaining and On-Demand Production (Cont.)

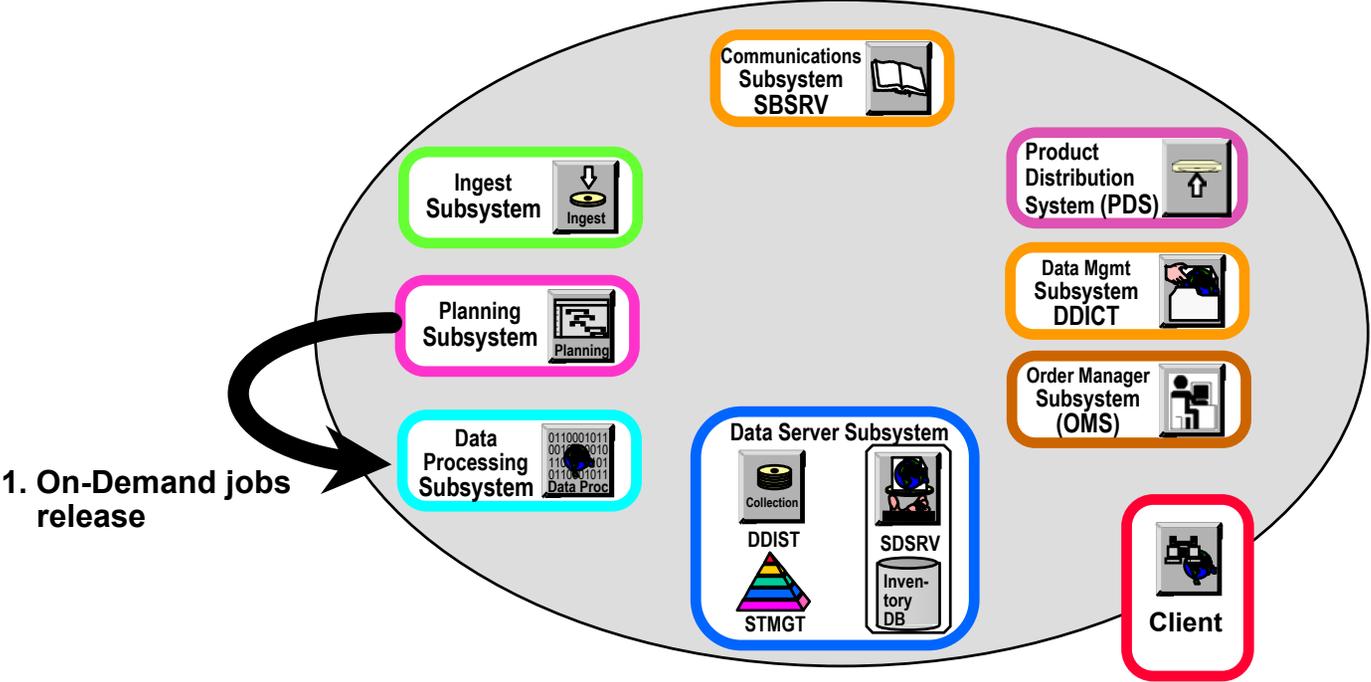


Planning releases the On-Demand jobs, including the DPR for ACT and a dependent one for ETS

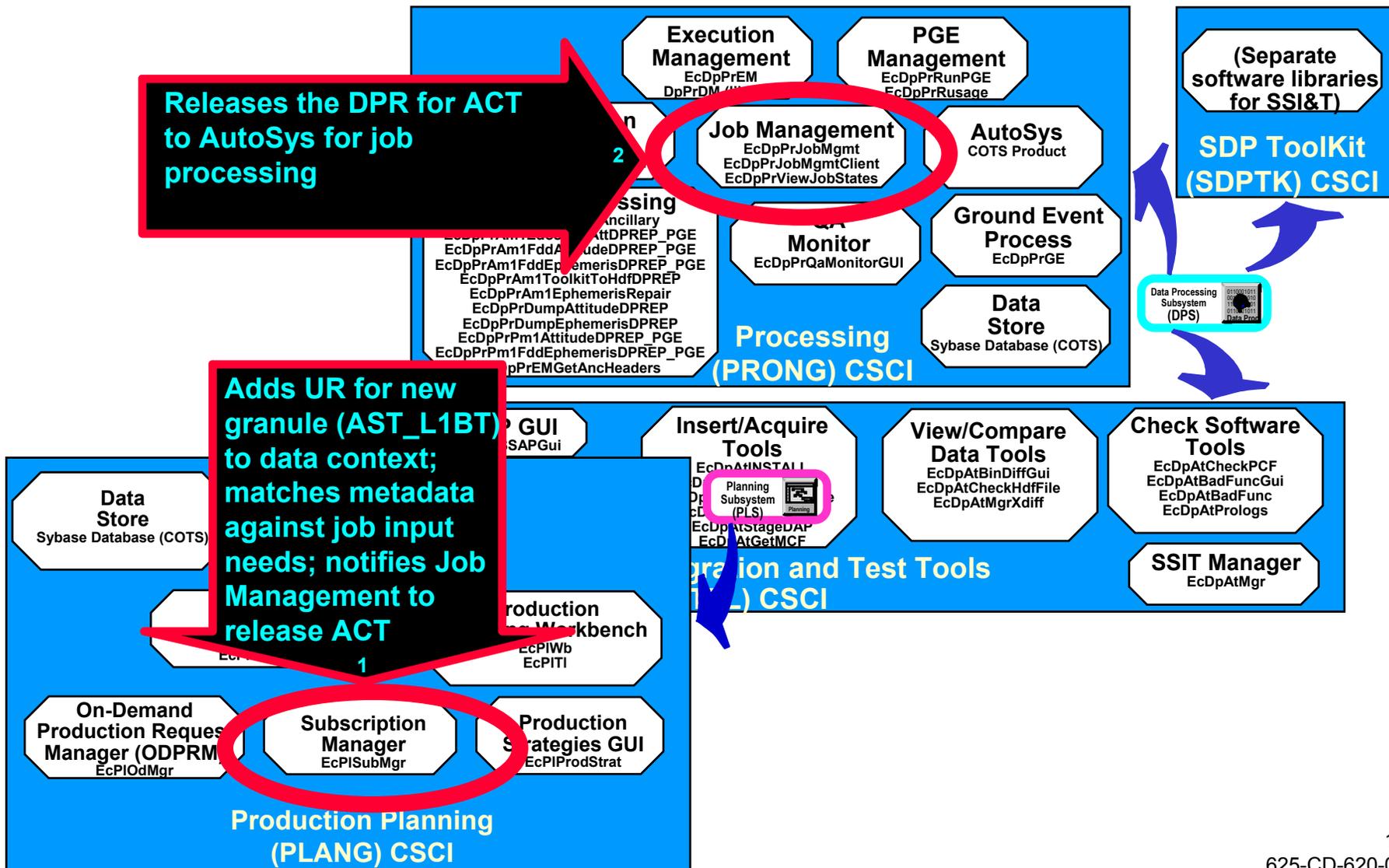
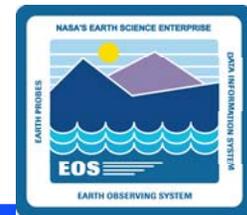


ASTER: Job Activation Process

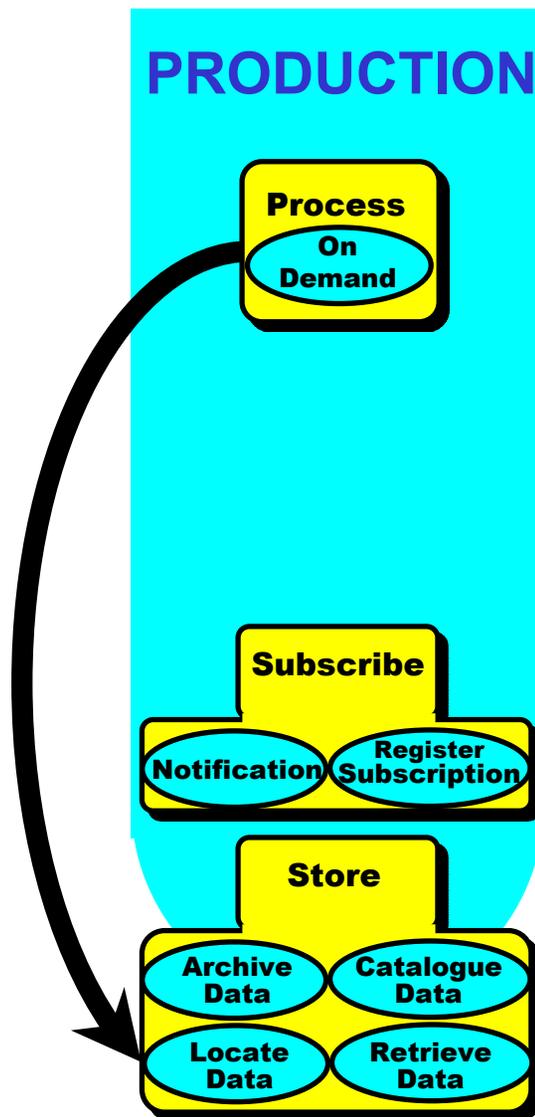
Planning releases the On-Demand jobs; the release activates the ACT DPR for processing.



ASTER: CSCI/Component Role in Job Activation

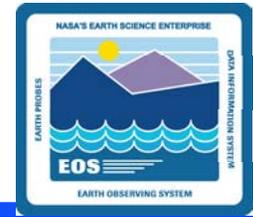


Chaining and On-Demand Production (Cont.)

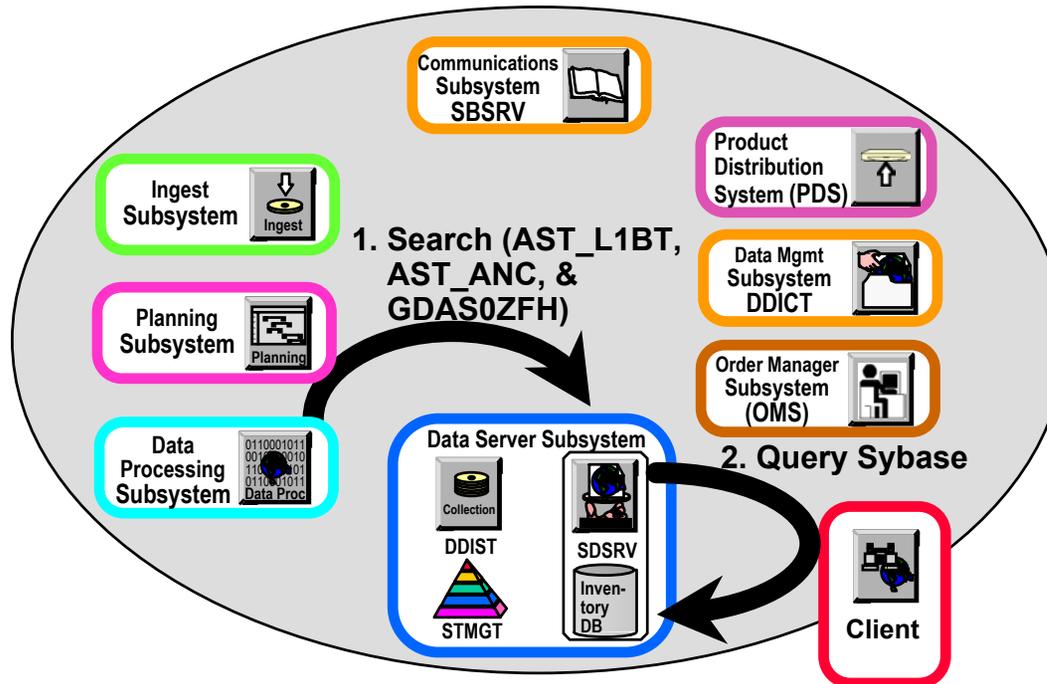


Job locates
AST_L1BT,
AST_ANC
(ASTER ancillary
data set), and
GDAS0ZFH
(NCEP ancillary)
data required for
ACT algorithm

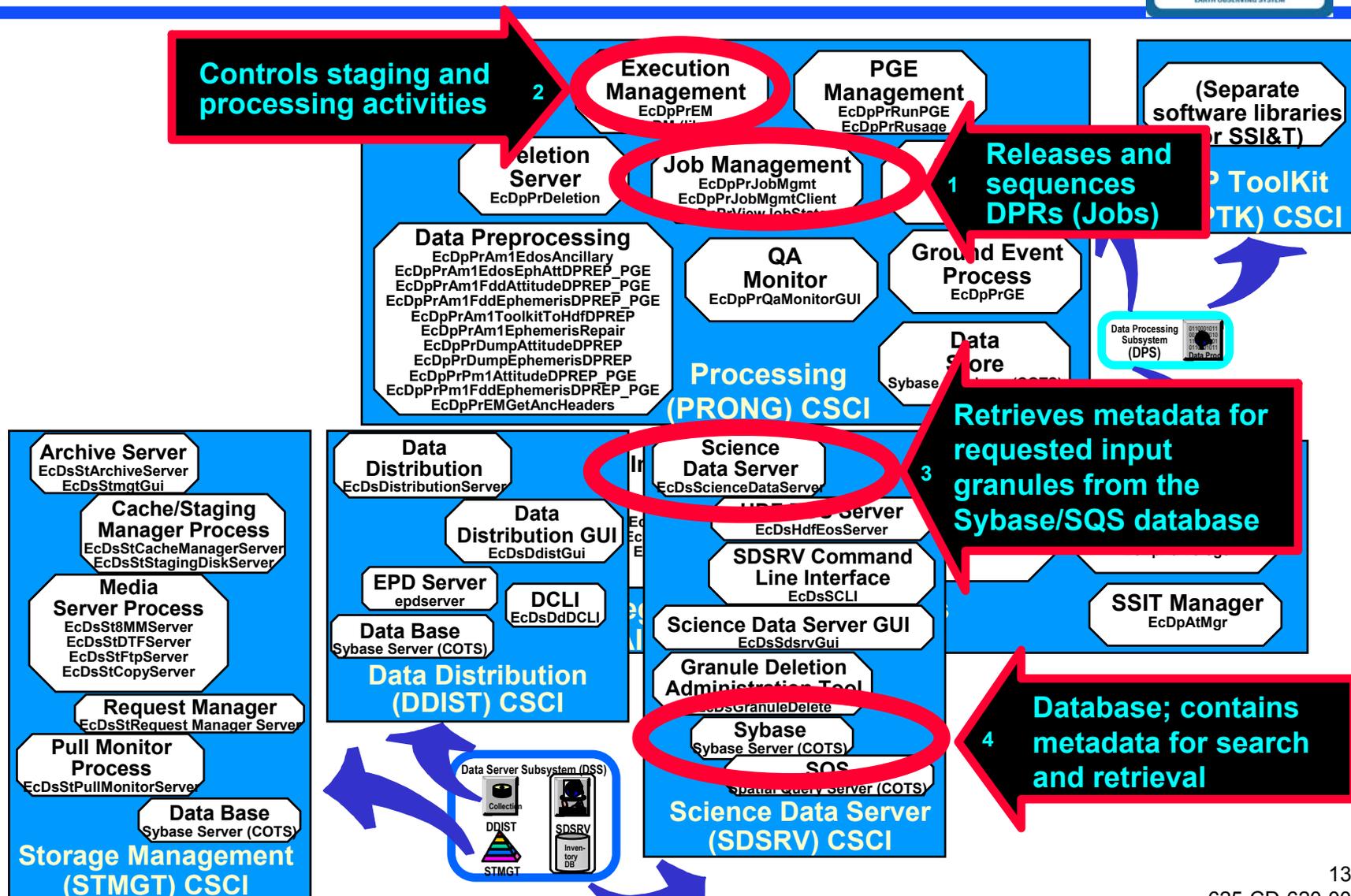
ASTER: Input Data Location Process



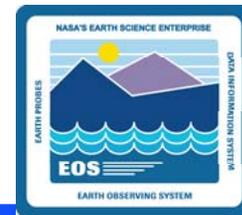
ACT locates required AST_L1BT (L1B TIR), AST_ANC (ASTER ancillary data set), and GDAS0ZFH (NCEP ancillary) input data granules.



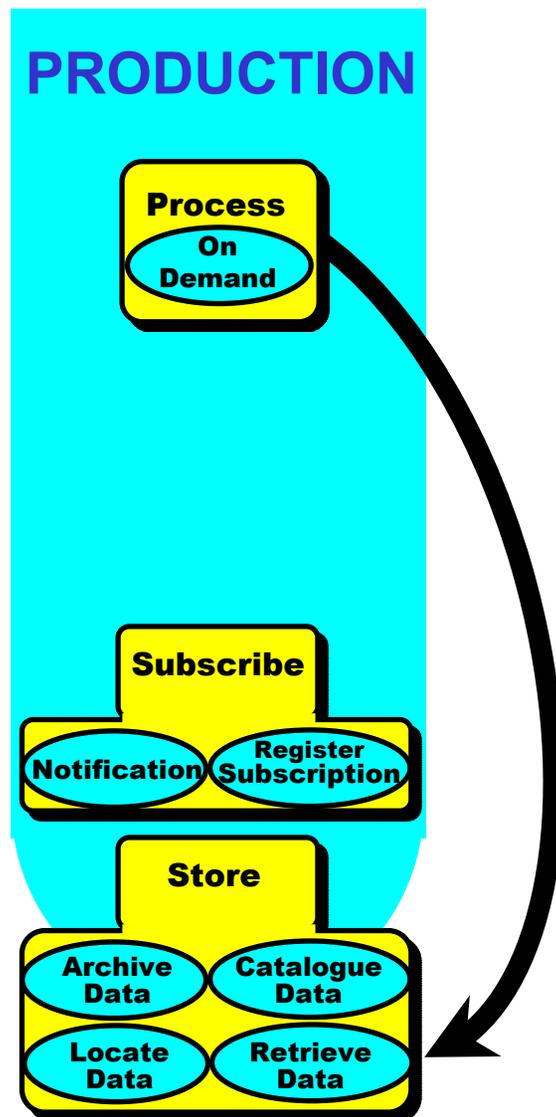
ASTER: CSCI/Component Role in Input Data Location



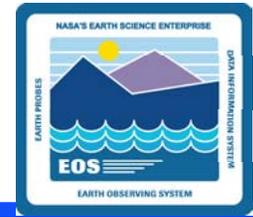
Chaining and On-Demand Production (Cont.)



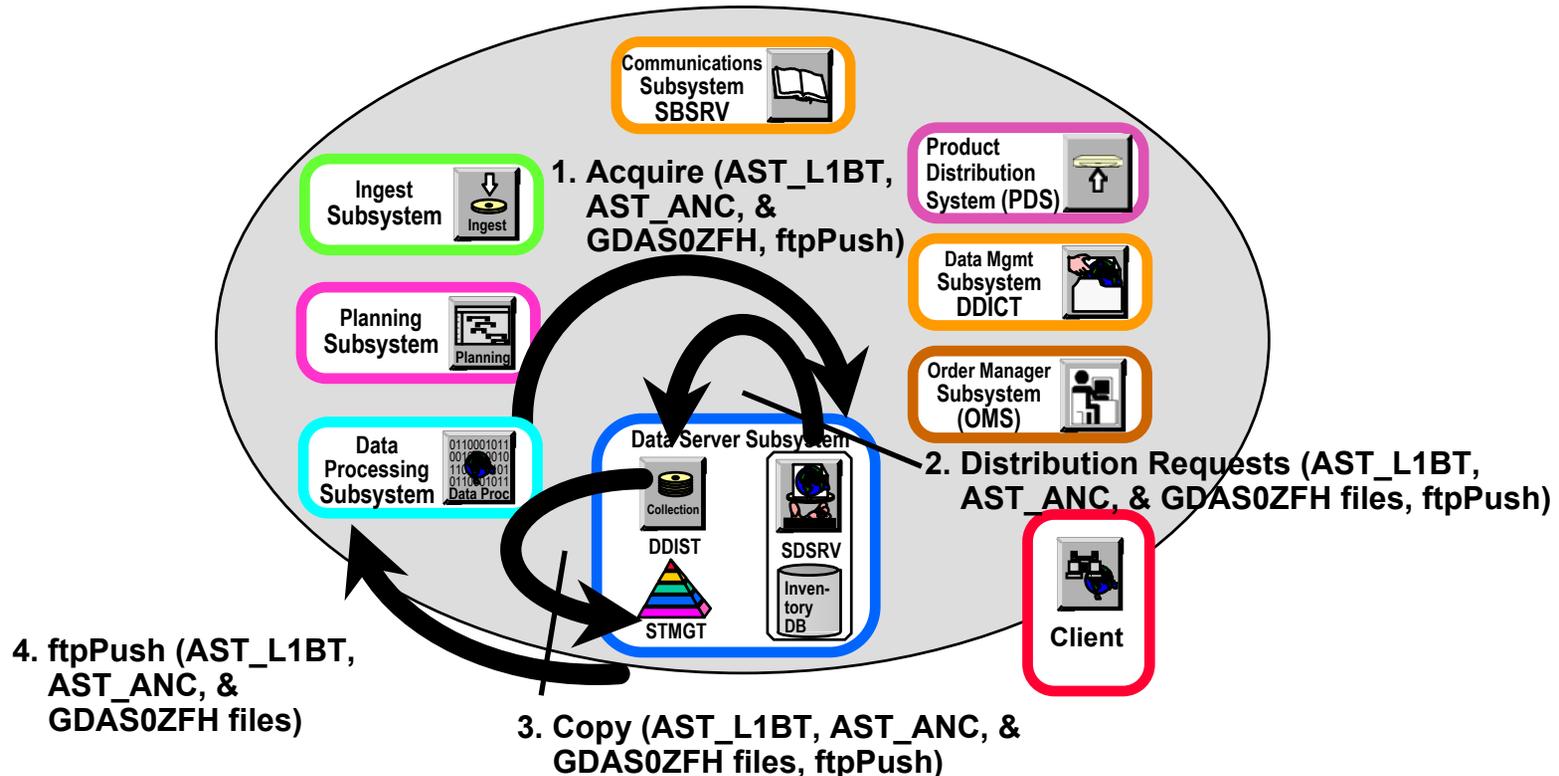
Retrieve
AST_L1B,
AST_ANC
(ASTER ancillary
data set), and
GDAS0ZFH
granules as input
to ACT; PGE
execution begins



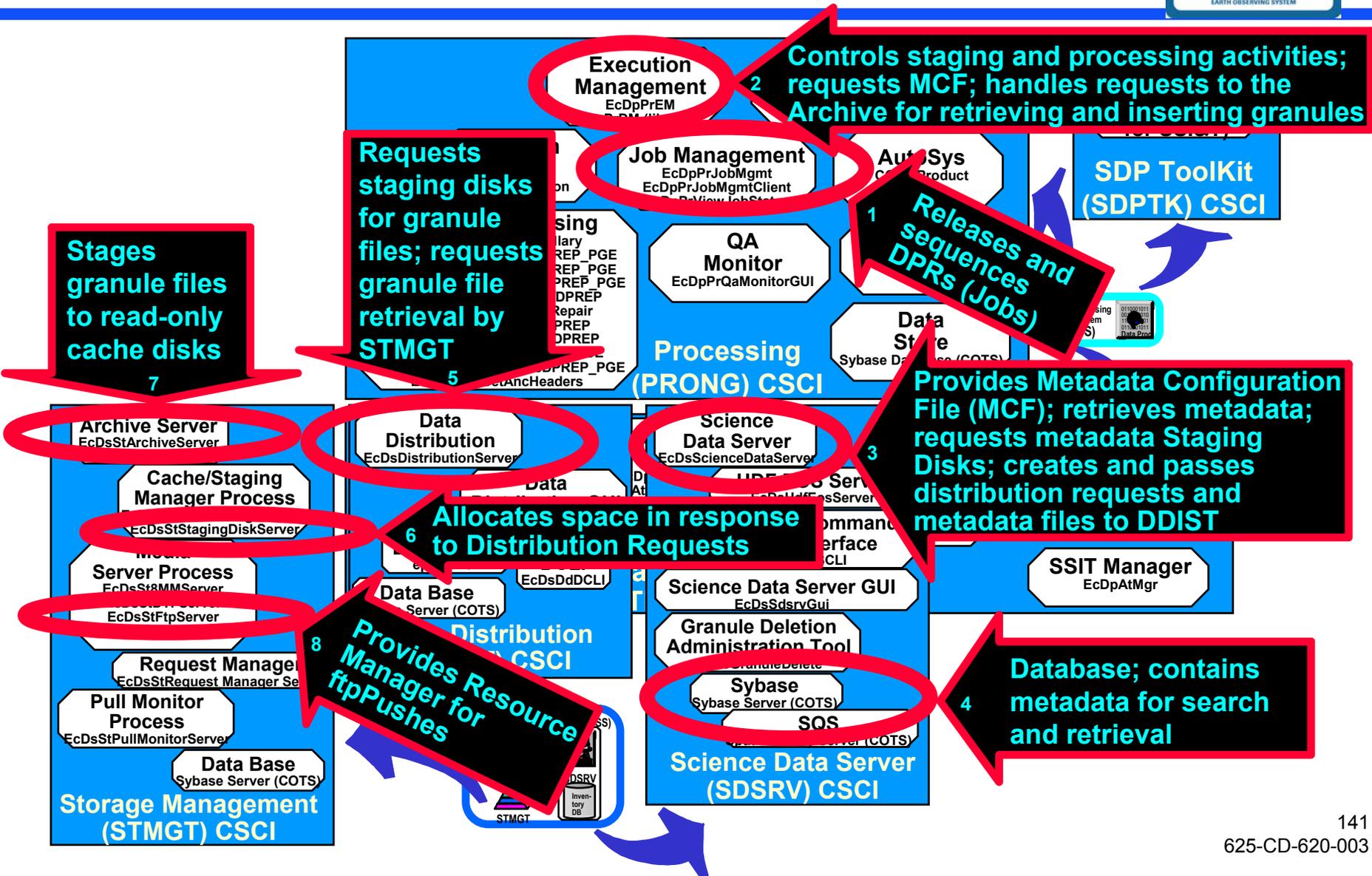
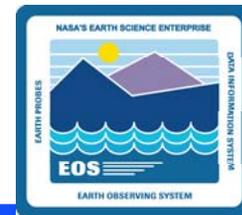
ASTER: Job Staging Process



ACT production job retrieves required AST_L1BT (L1B TIR), AST_ANC (ASTER ancillary data set), and GDAS0ZFH (NCEP ancillary) input data granules.



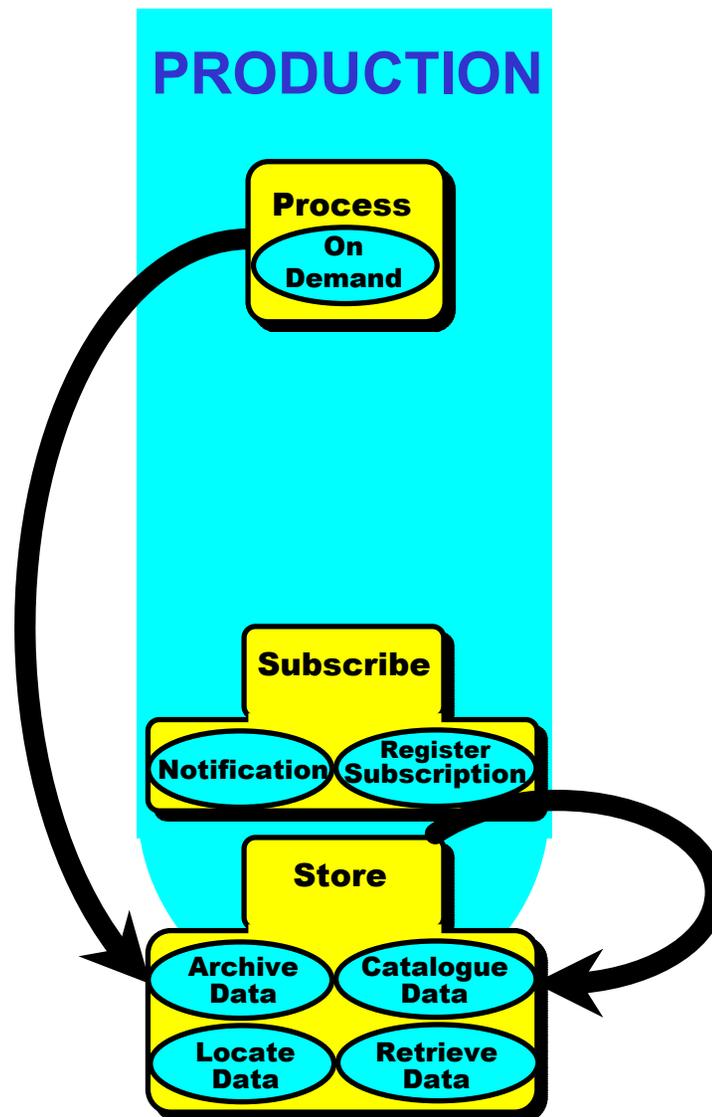
ASTER: CSCI/Component Role in Job Staging



Chaining and On-Demand Production (Cont.)



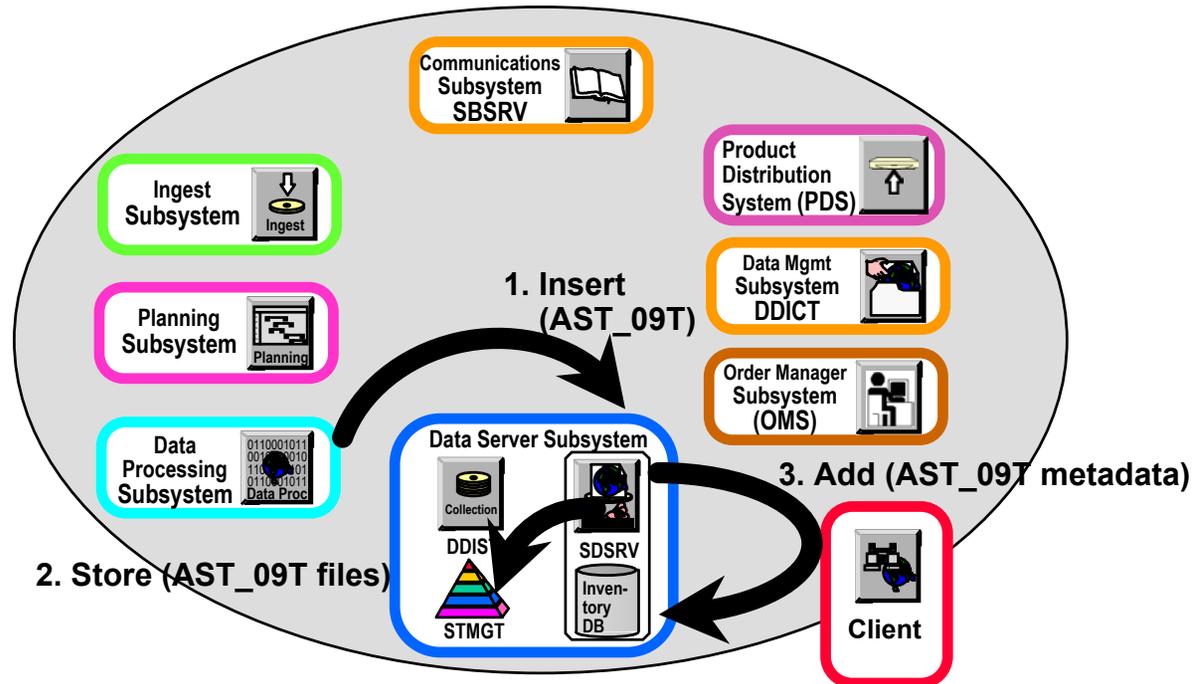
Archive newly created AST_09T (L2 Surface Radiance TIR) granule after completion of ACT PGE; update catalogue with reference to AST_09T



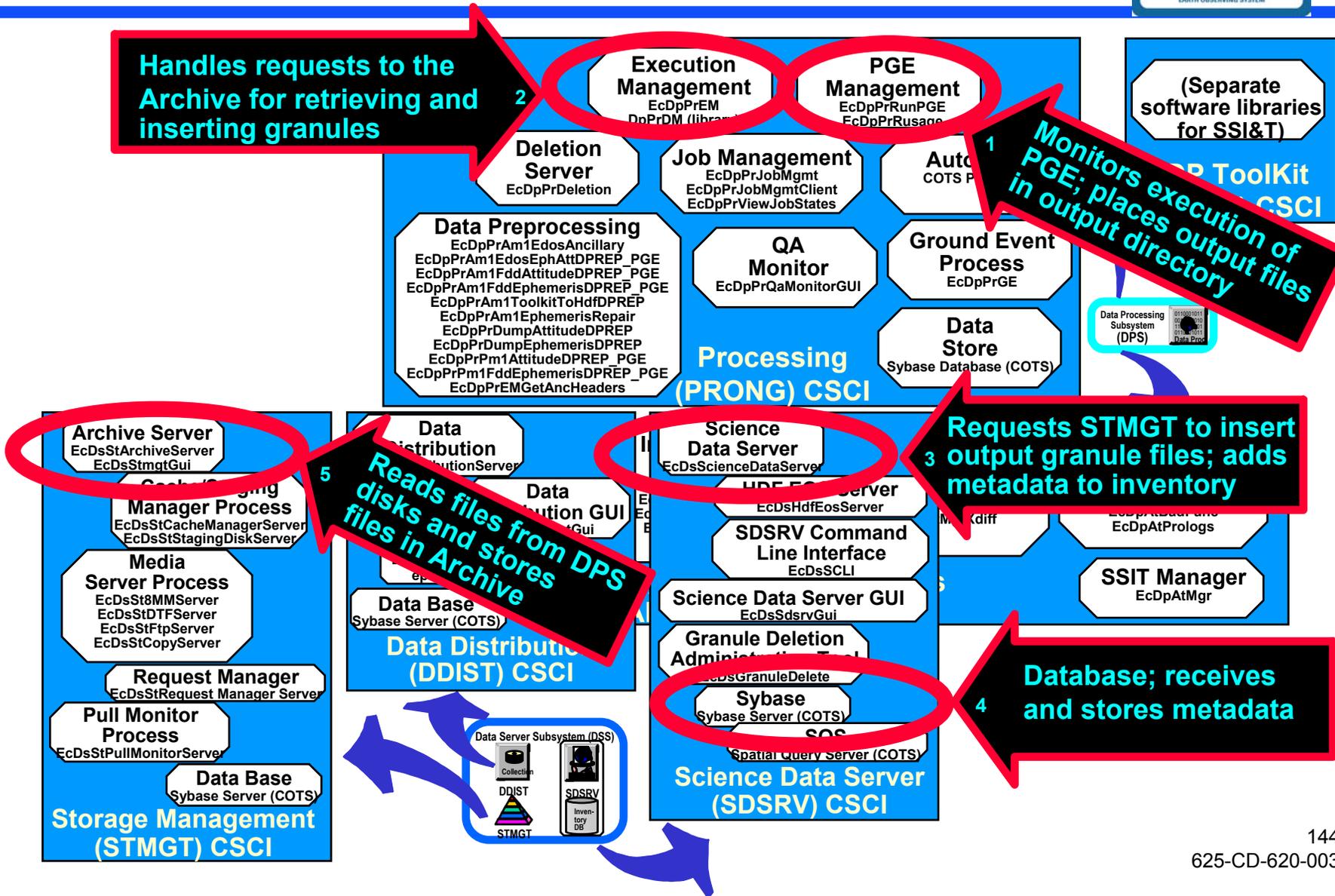
ASTER: PGE Execution and Output Insertion Process



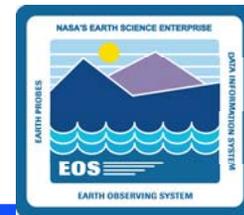
ACT PGE is successfully executed and newly created AST_09T (L2 Surface Radiance TIR) granule is archived; inventory is updated.



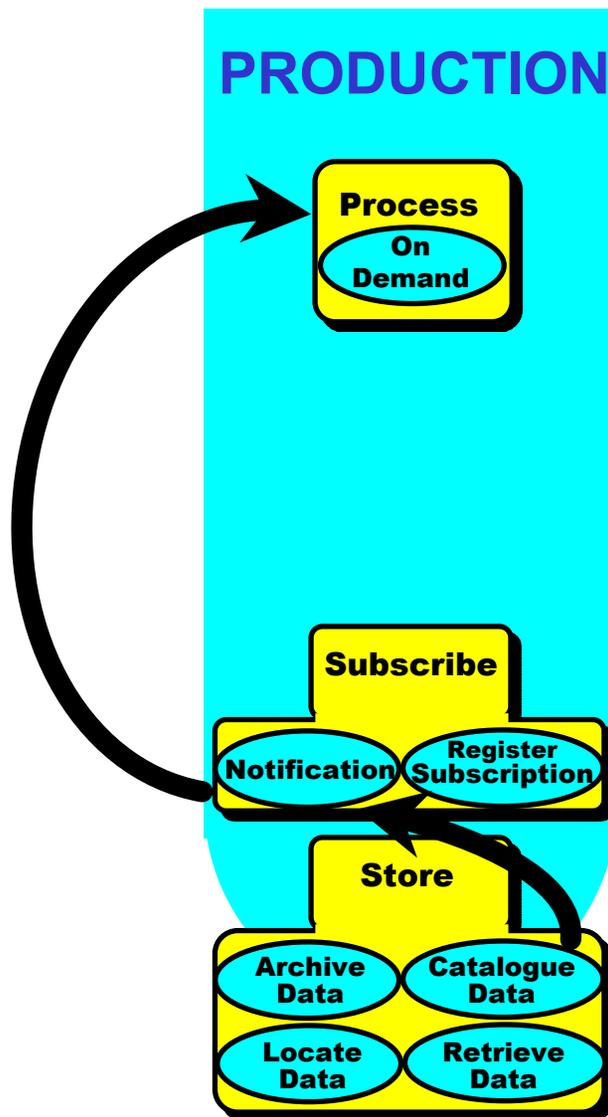
ASTER: CSCI/Component Role in PGE Execution and Output Insertion



Chaining and On-Demand Production (Cont.)



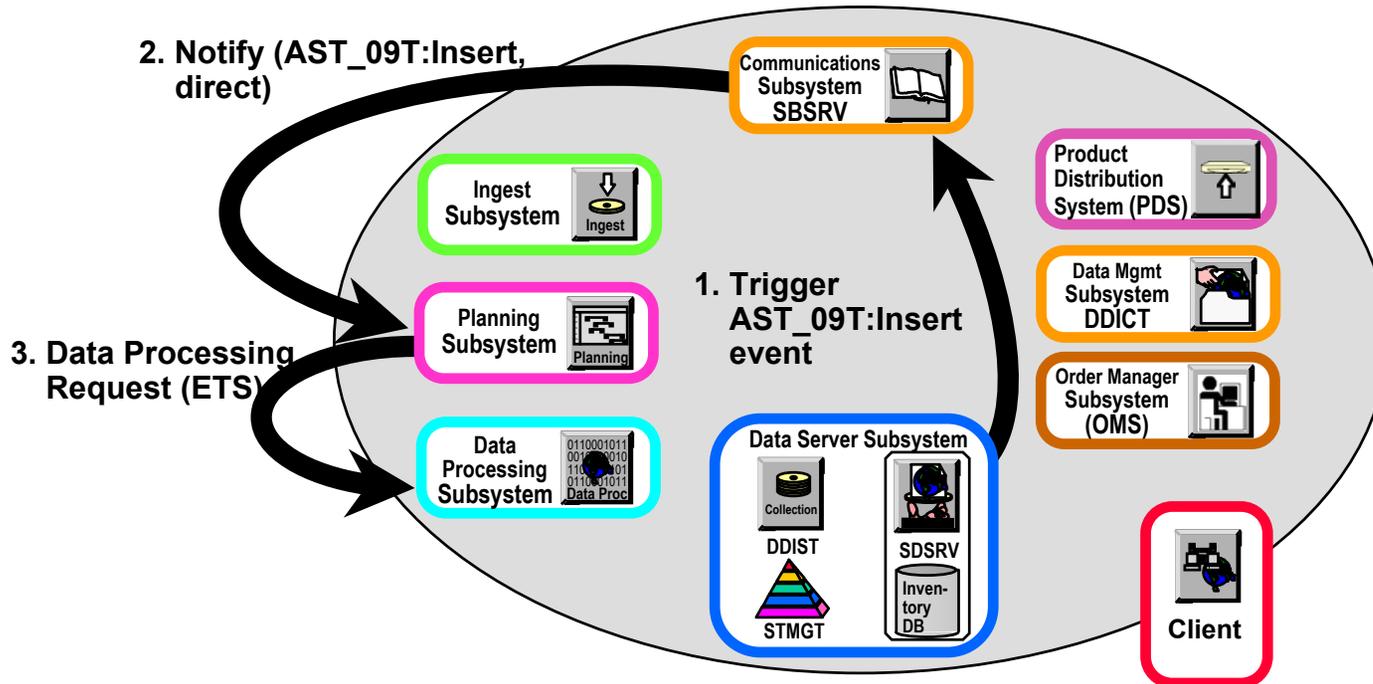
Insert terminates with an insert event notification to Subscribe, which in turn triggers initiation of ETS algorithm



ASTER: Notification and Subscription Triggering Process



Notify all AST_09T:Insert subscribers. This includes notification of the Planning Subsystem, for chained processing.



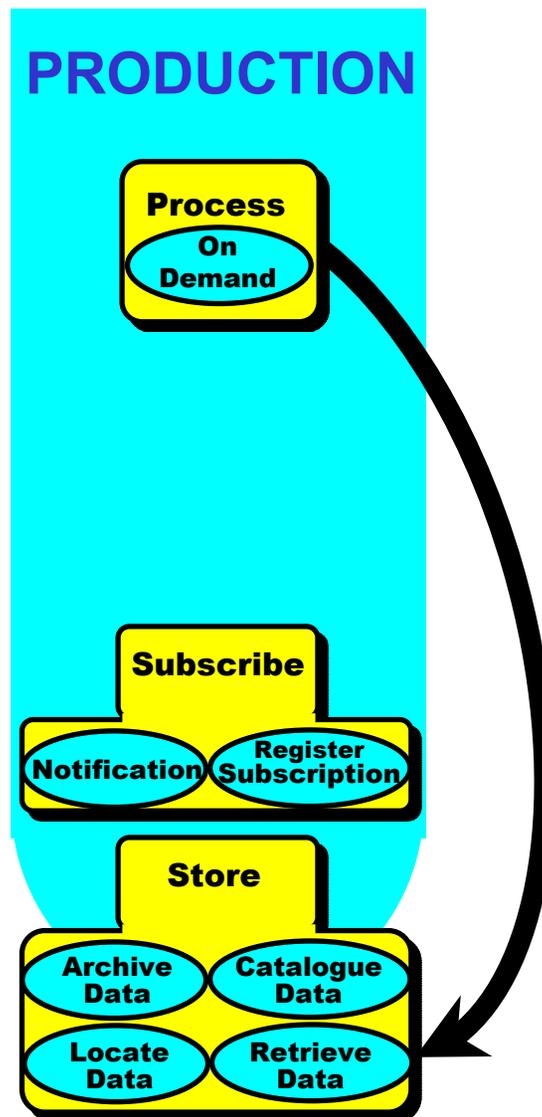
ASTER: CSCI/Component Role in Notification/Subscription Triggering



Chaining and On-Demand Production (Cont.)



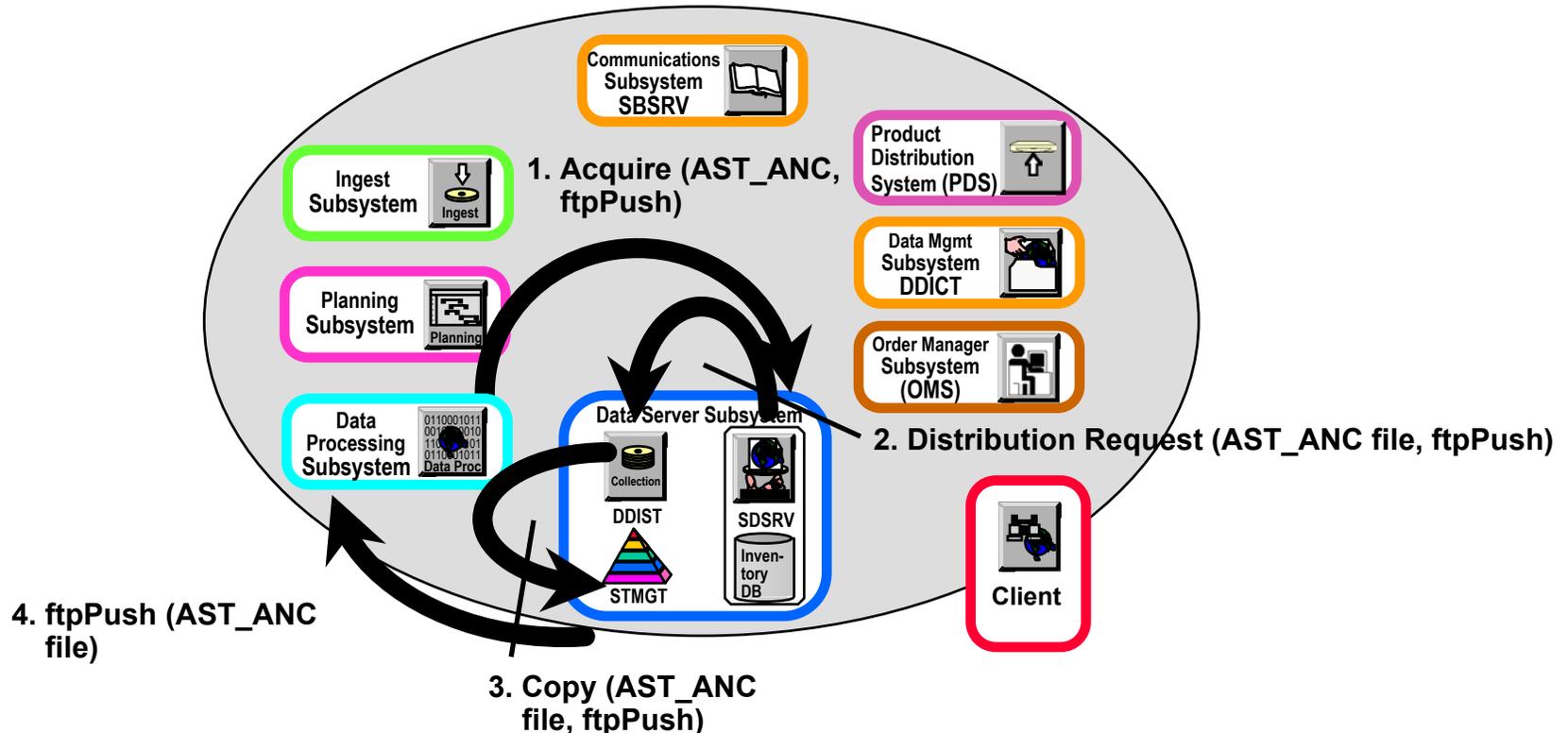
Retrieve AST Ancillary (ASTER ancillary data set) granule as input to ETS production job; PGE execution begins



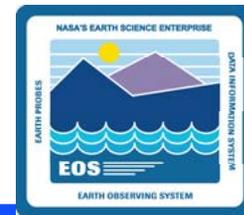
ASTER: Job (ETS) Staging Process



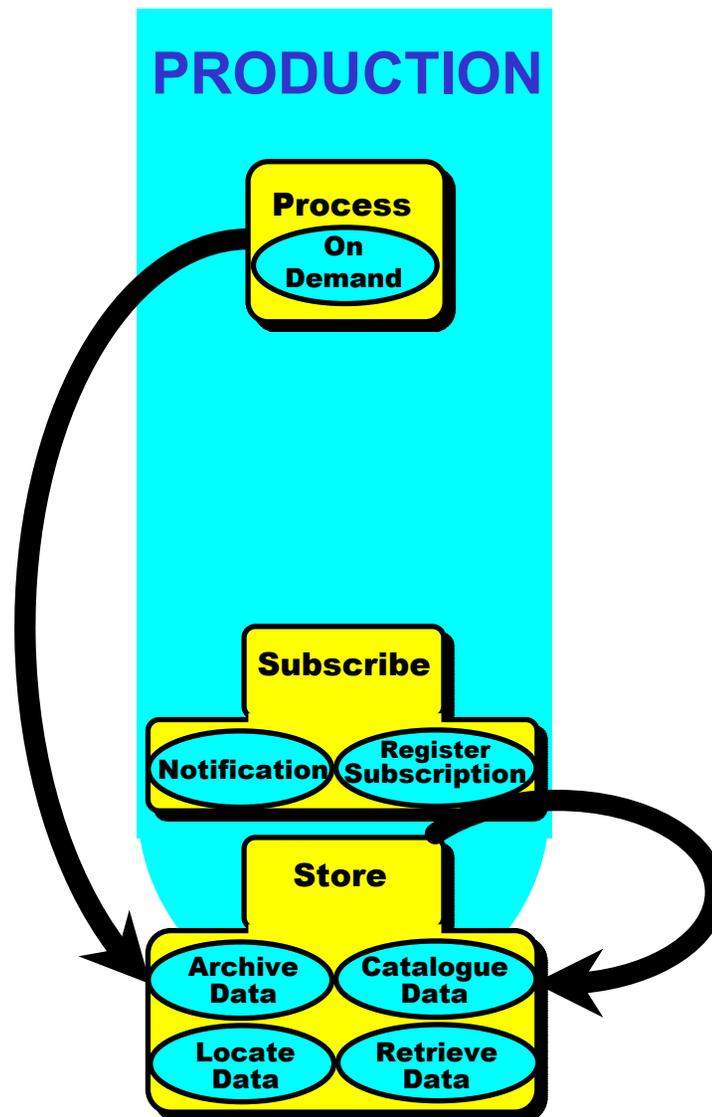
ETS production job retrieves required AST_ANC (ASTER ancillary data set) input data granule (Note: AST_09T is already available on DPS resources).



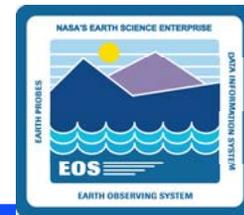
Chaining and On-Demand Production (Cont.)



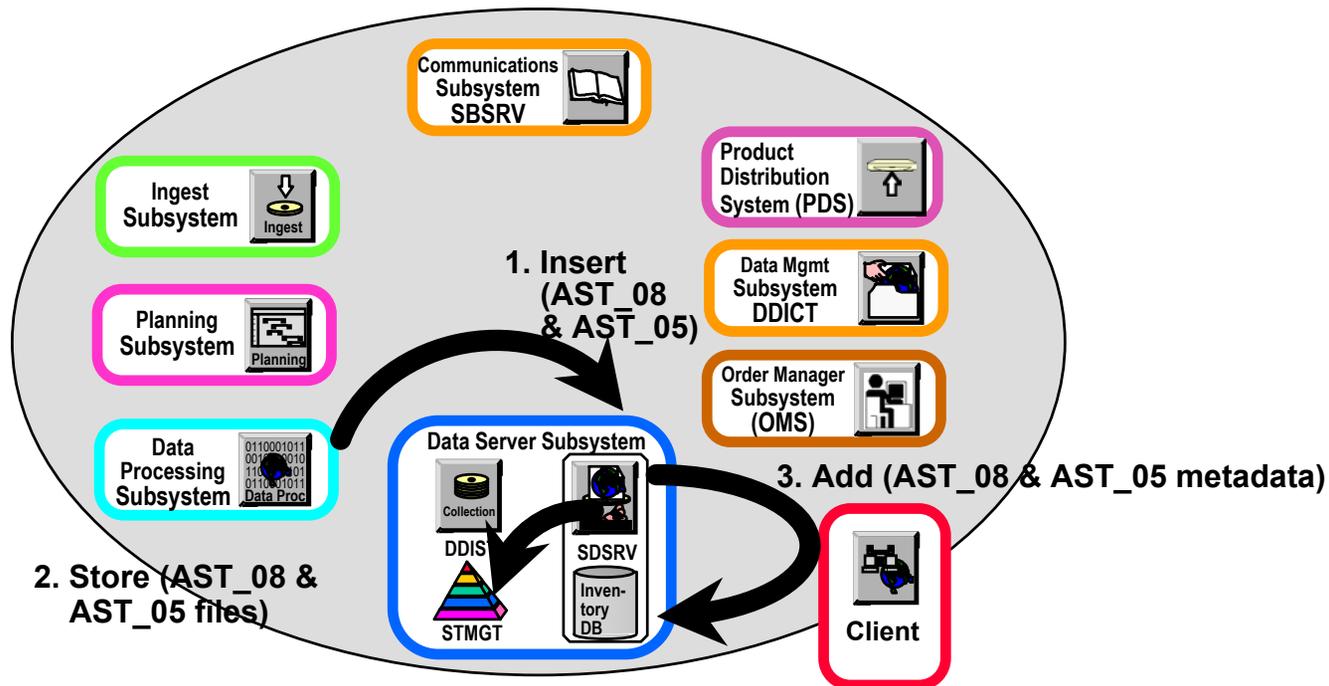
Archive newly created AST_08 (L2 Surface Temperature) and AST_05 (L2 Surface Emissivity) granules after completion of ETS PGE; update catalogue with references to AST_08 and AST_05



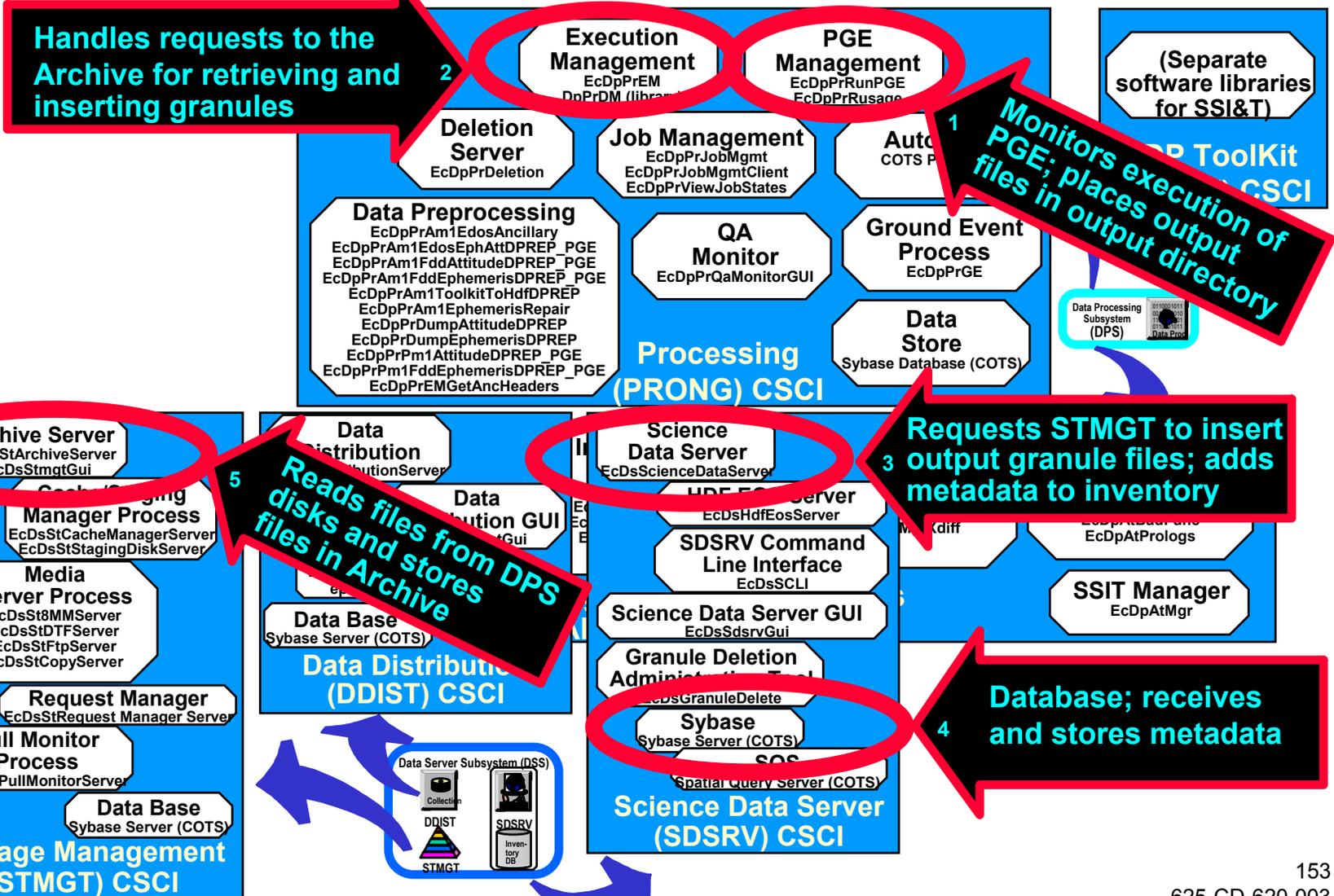
ASTER: PGE (ETS) Execution and Output Insertion Process



ETS PGE is successfully executed and newly created AST_08 (L2 Surface Temperature) and AST_05 (L2 Surface Emissivity) granules are archived; inventory is updated.



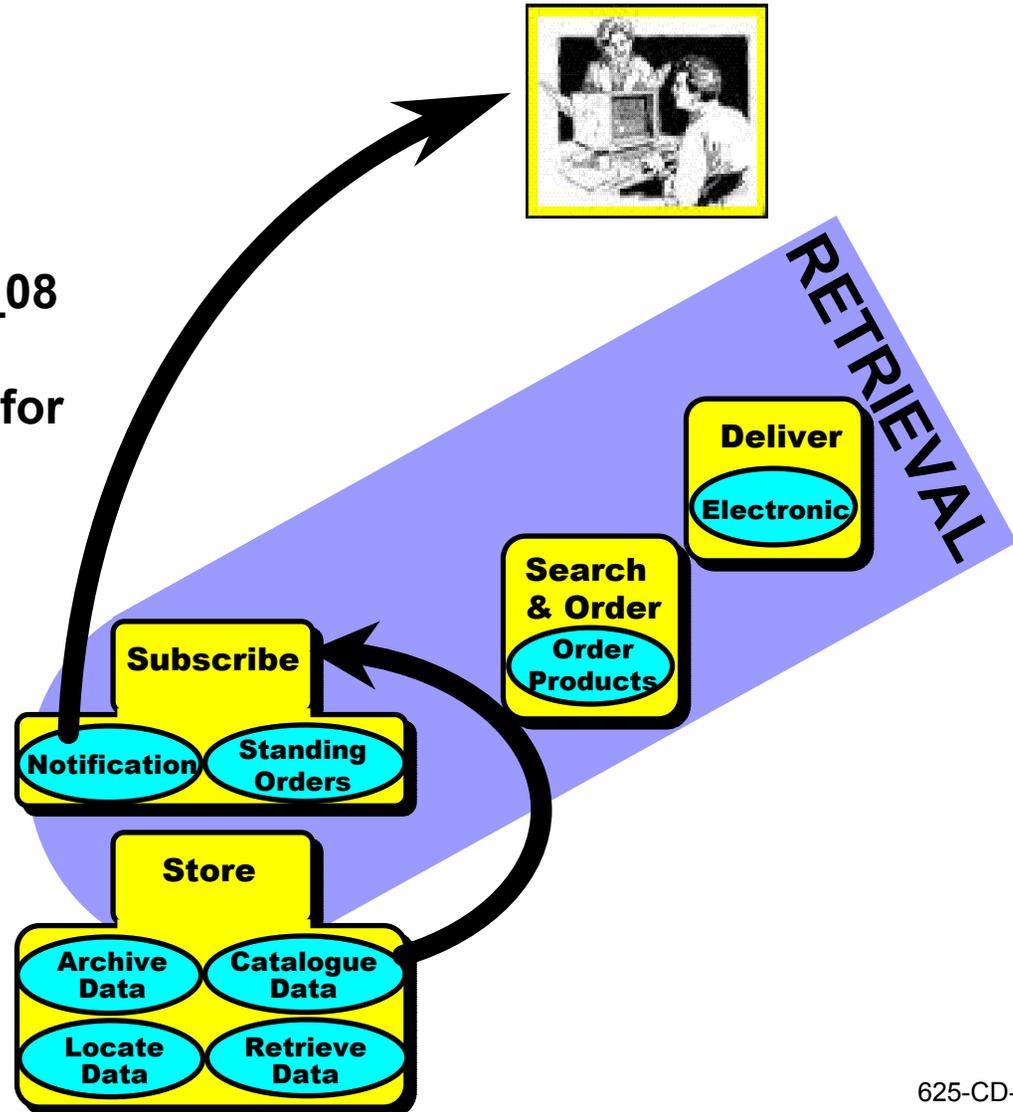
ASTER: CSCI/Component Role in PGE (ETS) Execution and Output Insertion



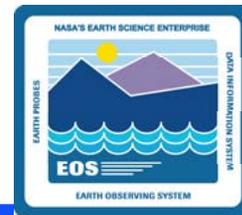
Chaining and On-Demand Production (Cont.)



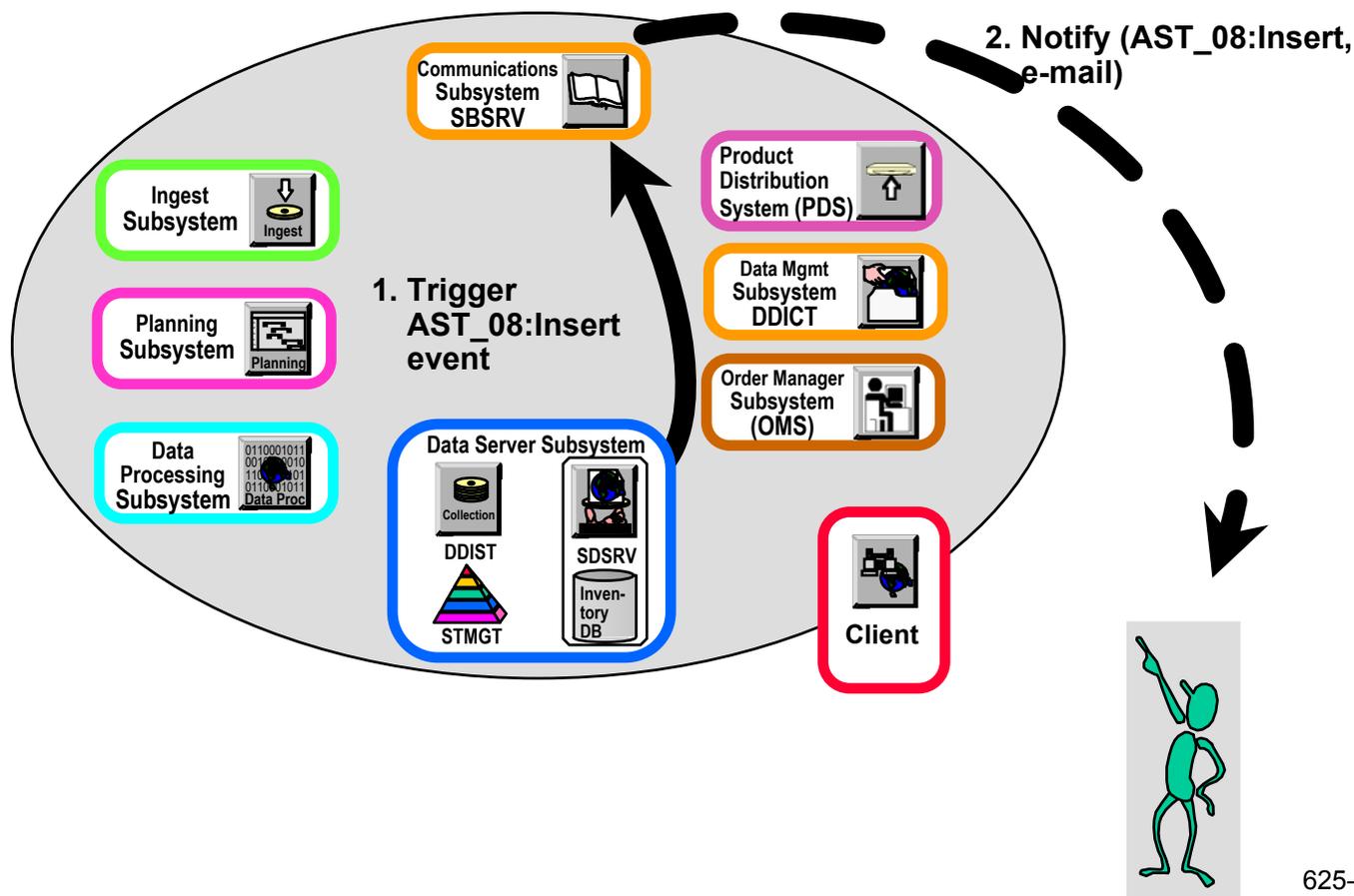
Insert terminates with an insert event notification to **Subscribe**, which triggers e-mail notification to the Science User that the **AST_08** granule has been inserted; standing order processing for new **AST_08** granule can begin



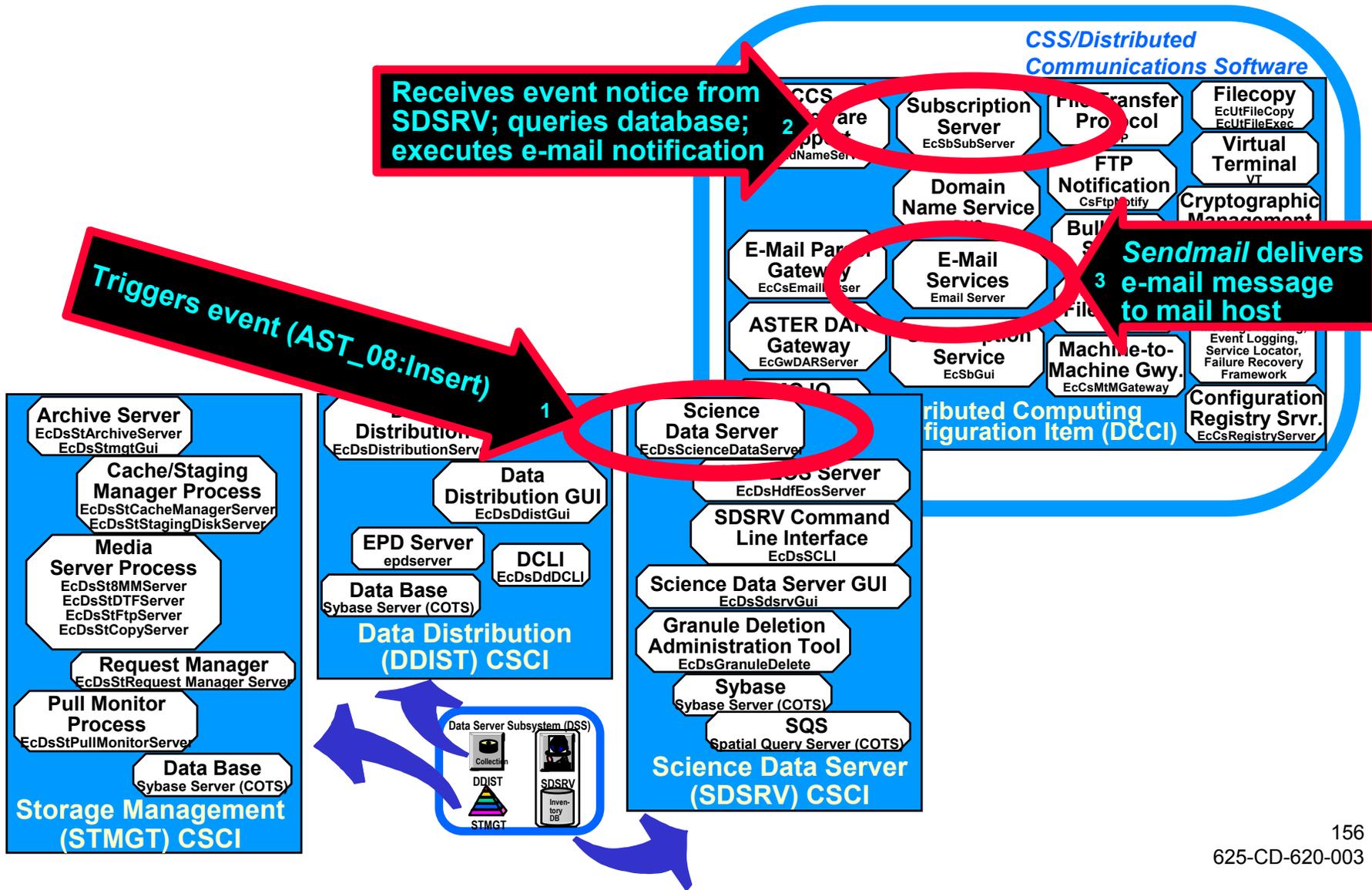
ASTER: Notification and Subscription Triggering (AST_08) Process



With insertion of the AST_08 (L2 Surface Temperature) granule, the ASTER Scientist is notified by e-mail; processing can begin for the standing order



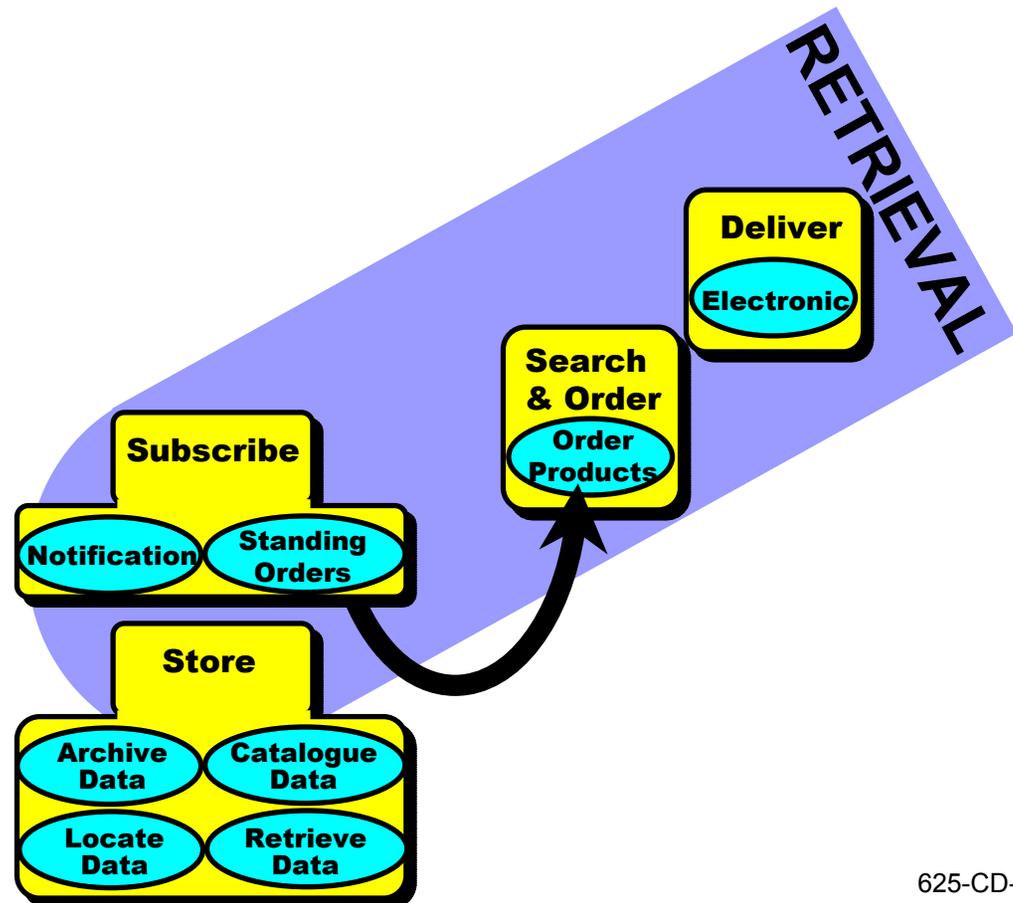
ASTER: CSCI/Component Role in Notification/Subscription (AST_08) Trigger



Chaining and On-Demand Production (Cont.)



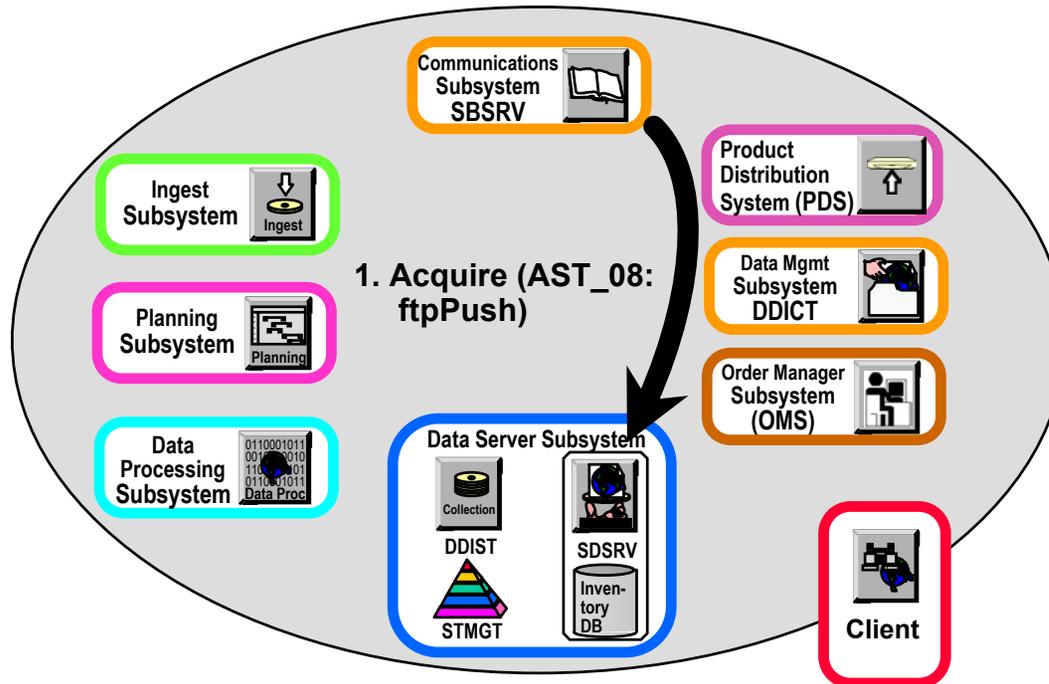
Submit acquire request for new AST_08 granule on behalf of scientist



ASTER: Standing Order, Acquire Submission Process



Subscription Server submits acquire request for AST_08 (L2 Surface Temperature) data, via ftpPush, on behalf of the Science User

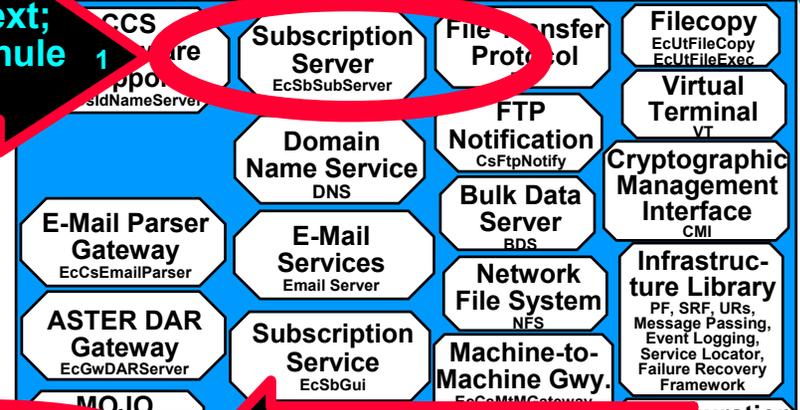


ASTER: CSCI/Component Role in Standing Order, Acquire Submission



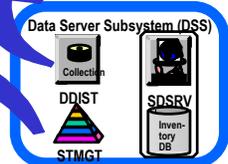
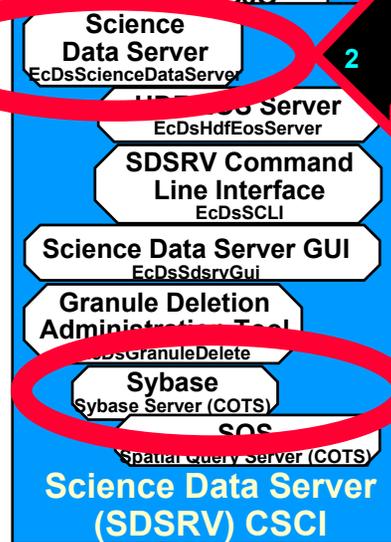
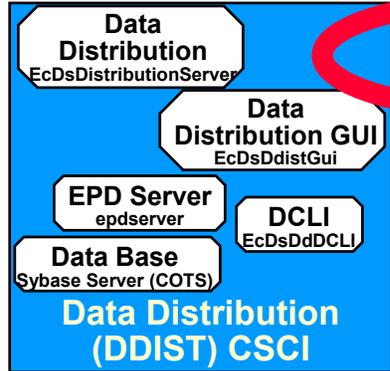
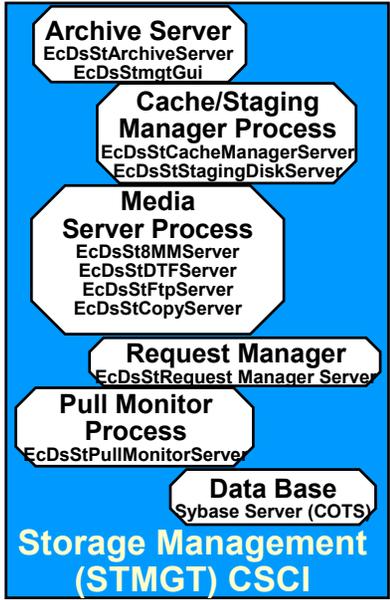
Connects to SDSRV; establishes data context; submits Acquire request for ftpPush of granule and request for e-mail notice of distribution

CSS/Distributed Communications Software



Retrieves metadata

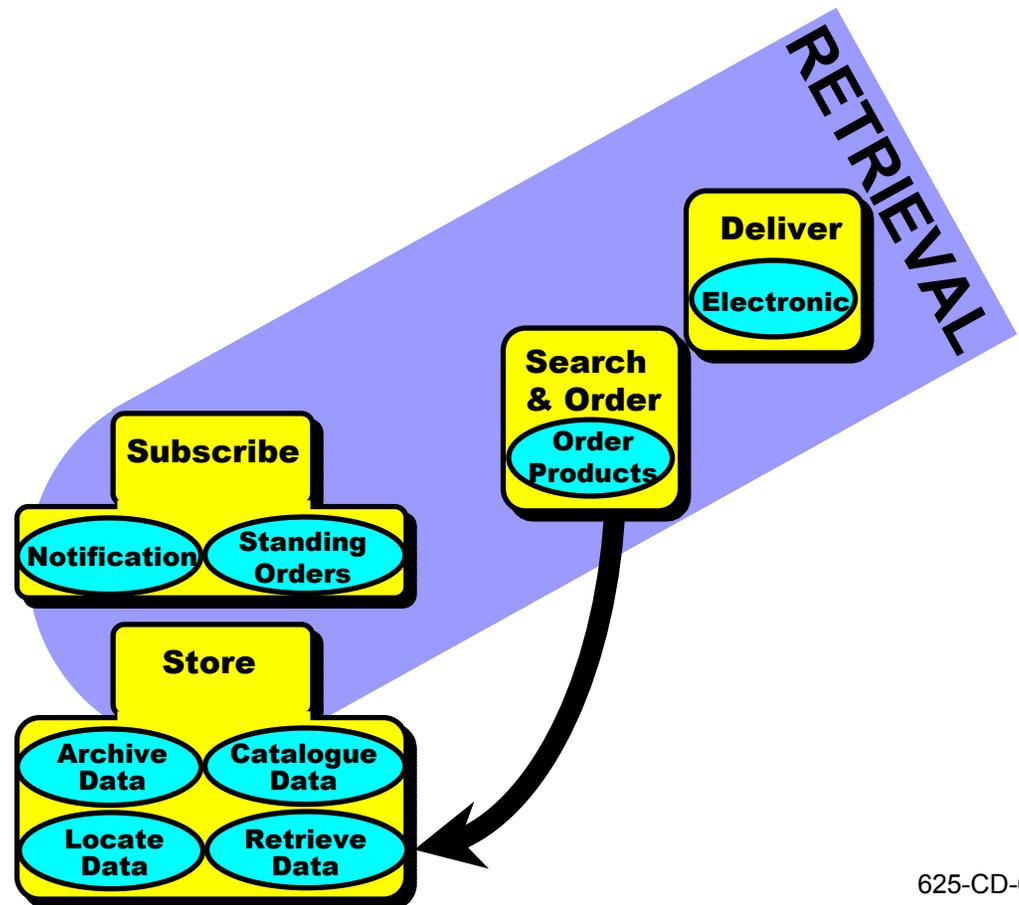
Database; stores metadata for search and retrieval



Chaining and On-Demand Production (Cont.)



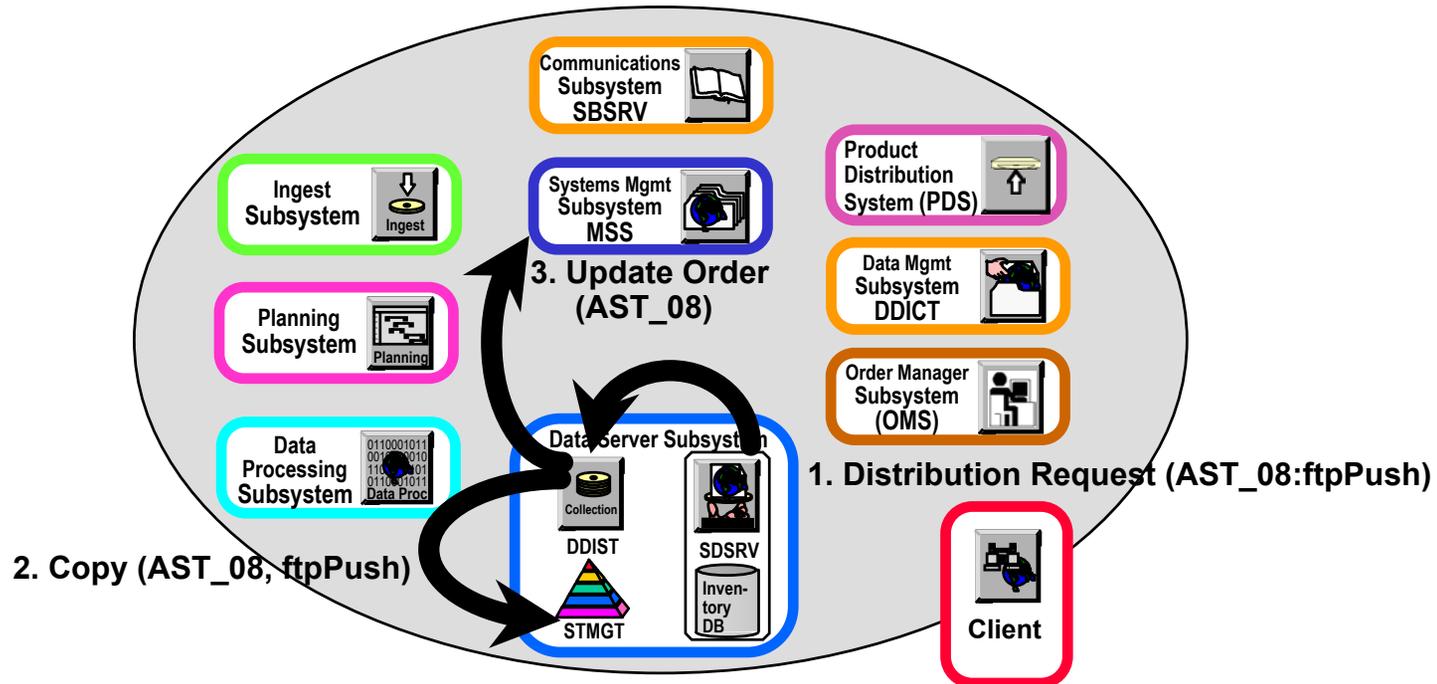
Retrieve newly created
AST_08 granule



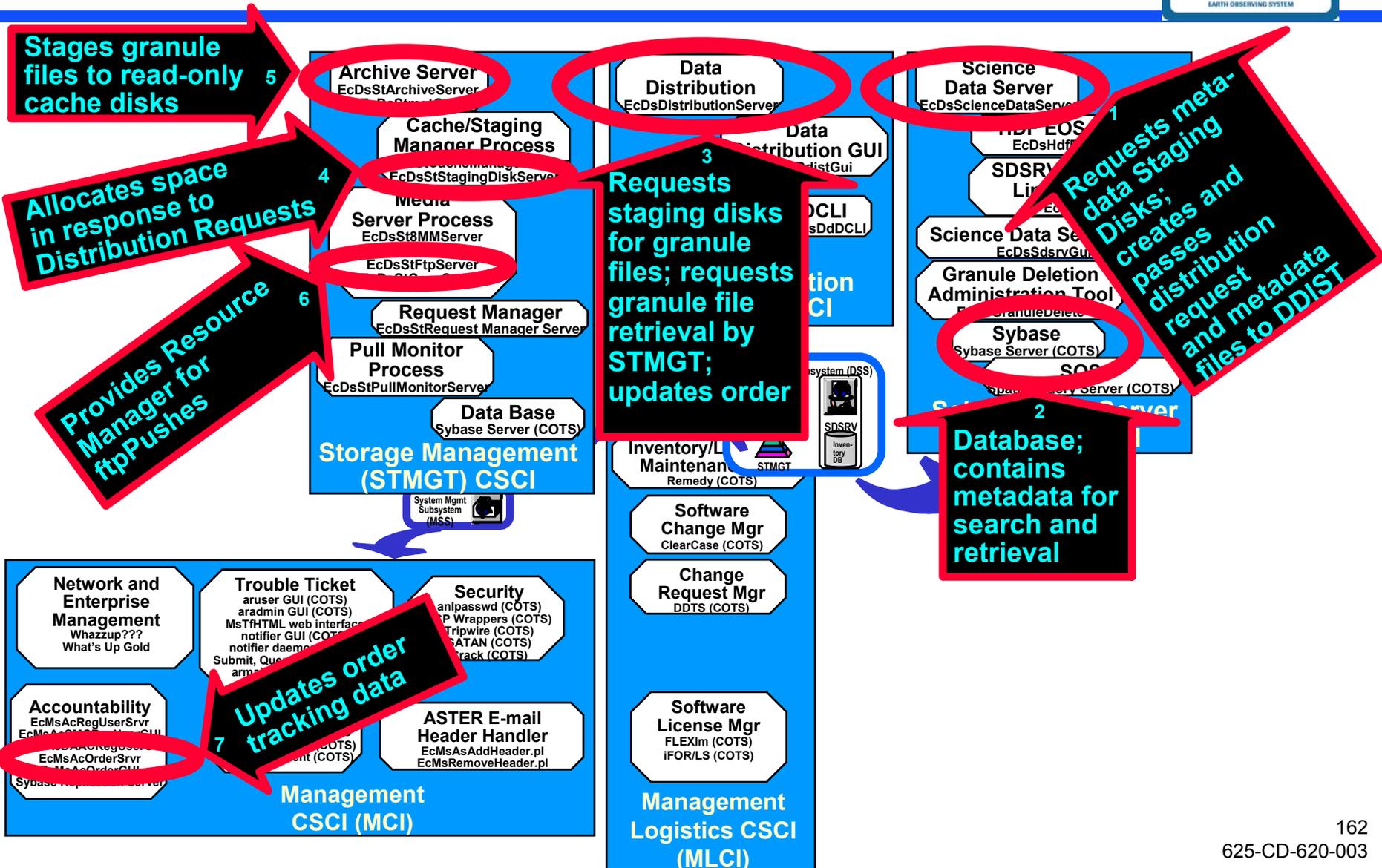
ASTER: Retrieval of Data for Distribution Process



Retrieve newly created AST_08 (L2 Surface Temperature) granule from the Archive and update the order tracking information.



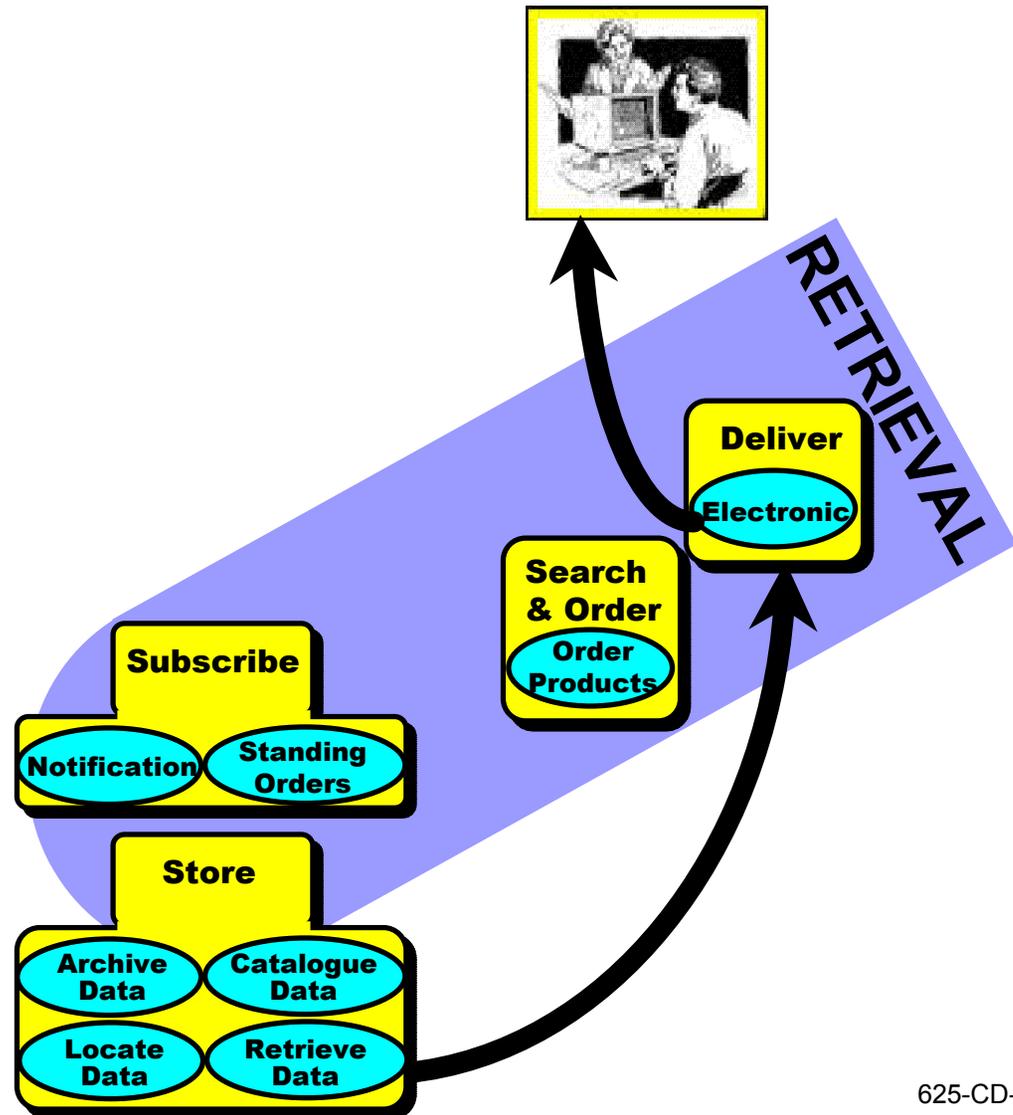
ASTER: CSCI/Component Role in Retrieval of Data for Distribution



Chaining and On-Demand Production (Cont.)



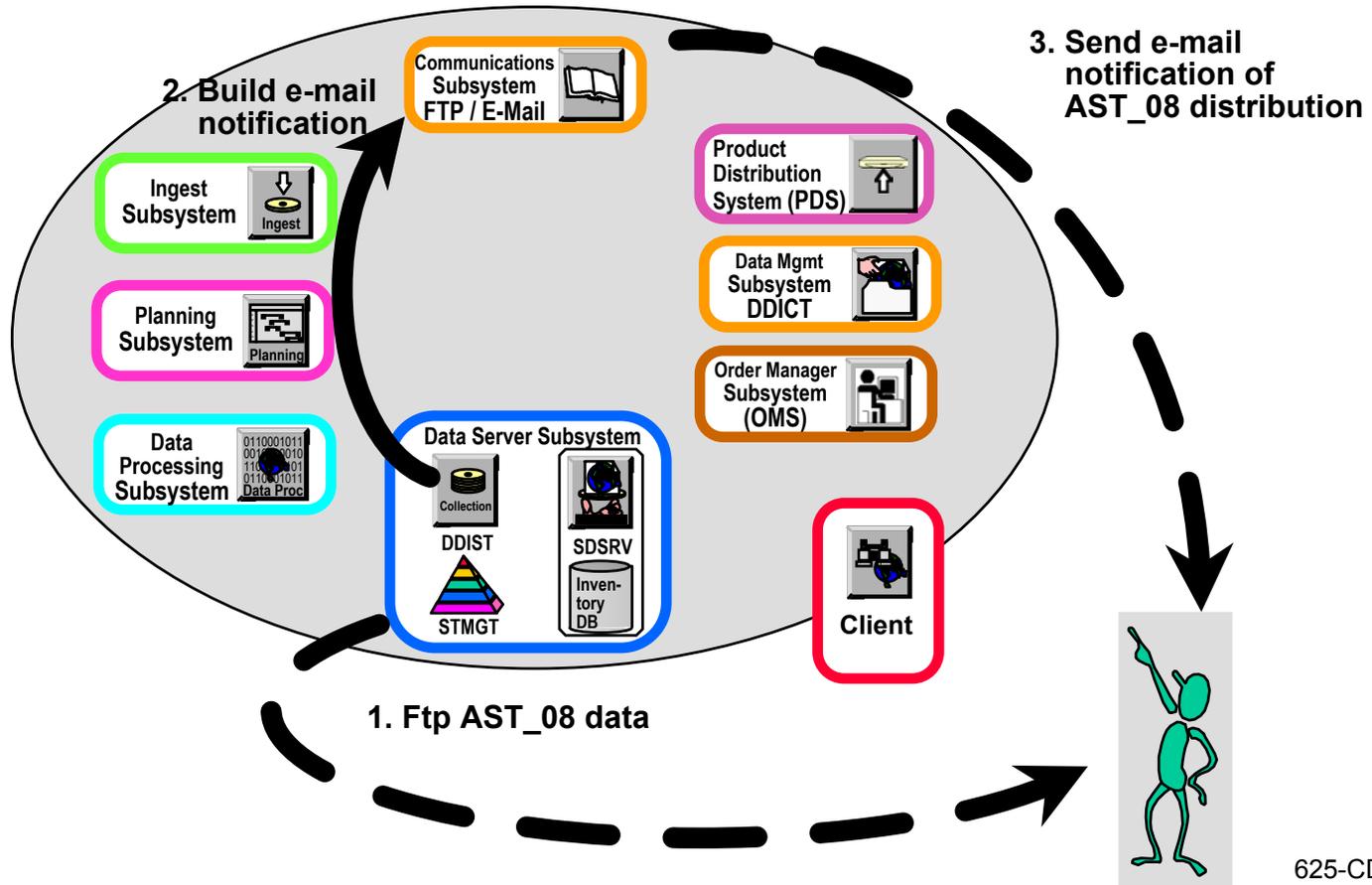
Ftp newly created AST_08 granule to scientist's workstation and send an e-mail notification of the distribution



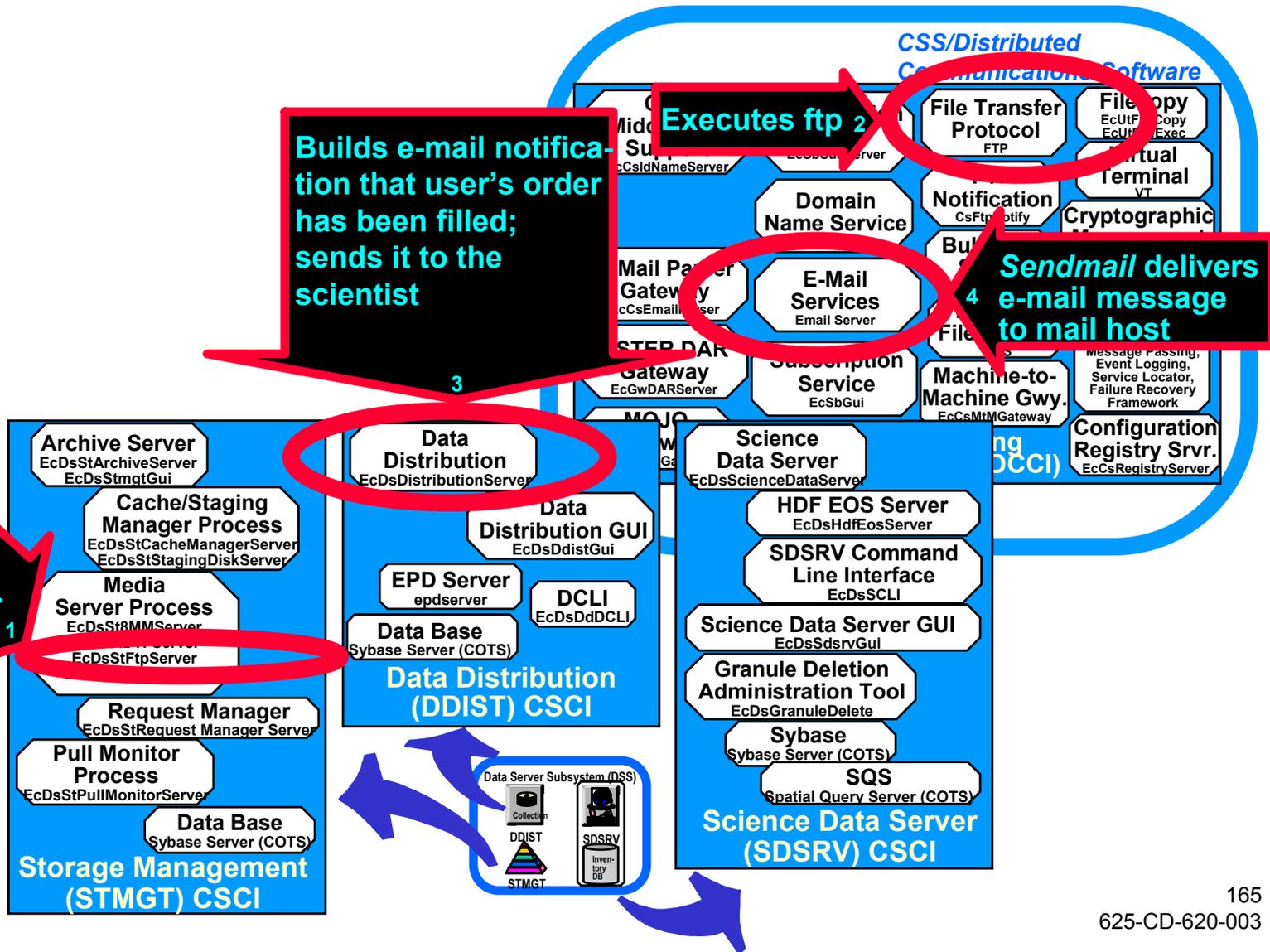
ASTER: Electronic Data Push Distribution Process



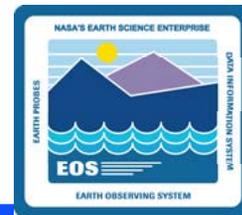
Ftp AST_08 (L2 Surface Temperature) granule to
ASTER Scientist's workstation.



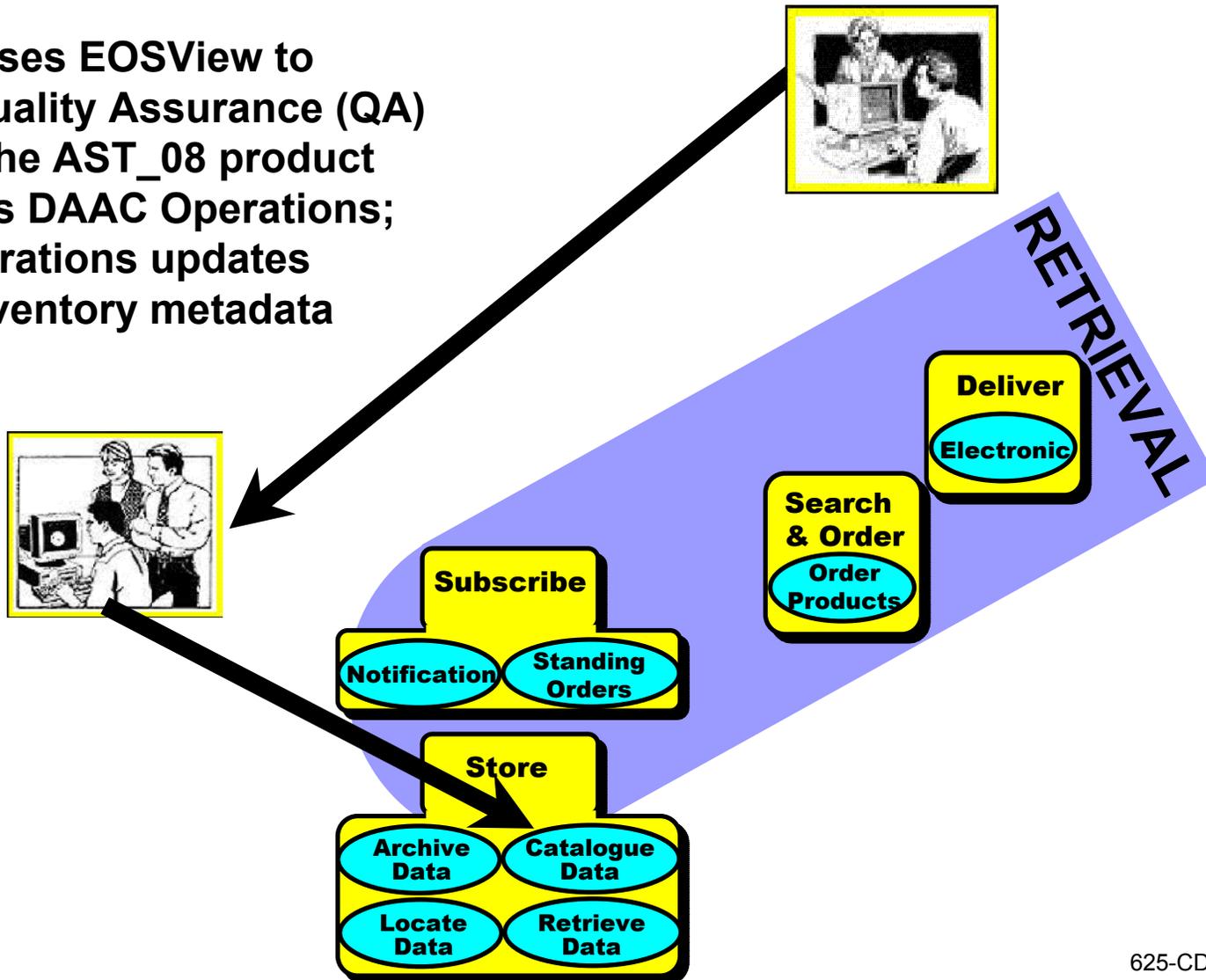
ASTER: CSCI/Component Role in Electronic Data Push Distribution



Chaining and On-Demand Production (Cont.)



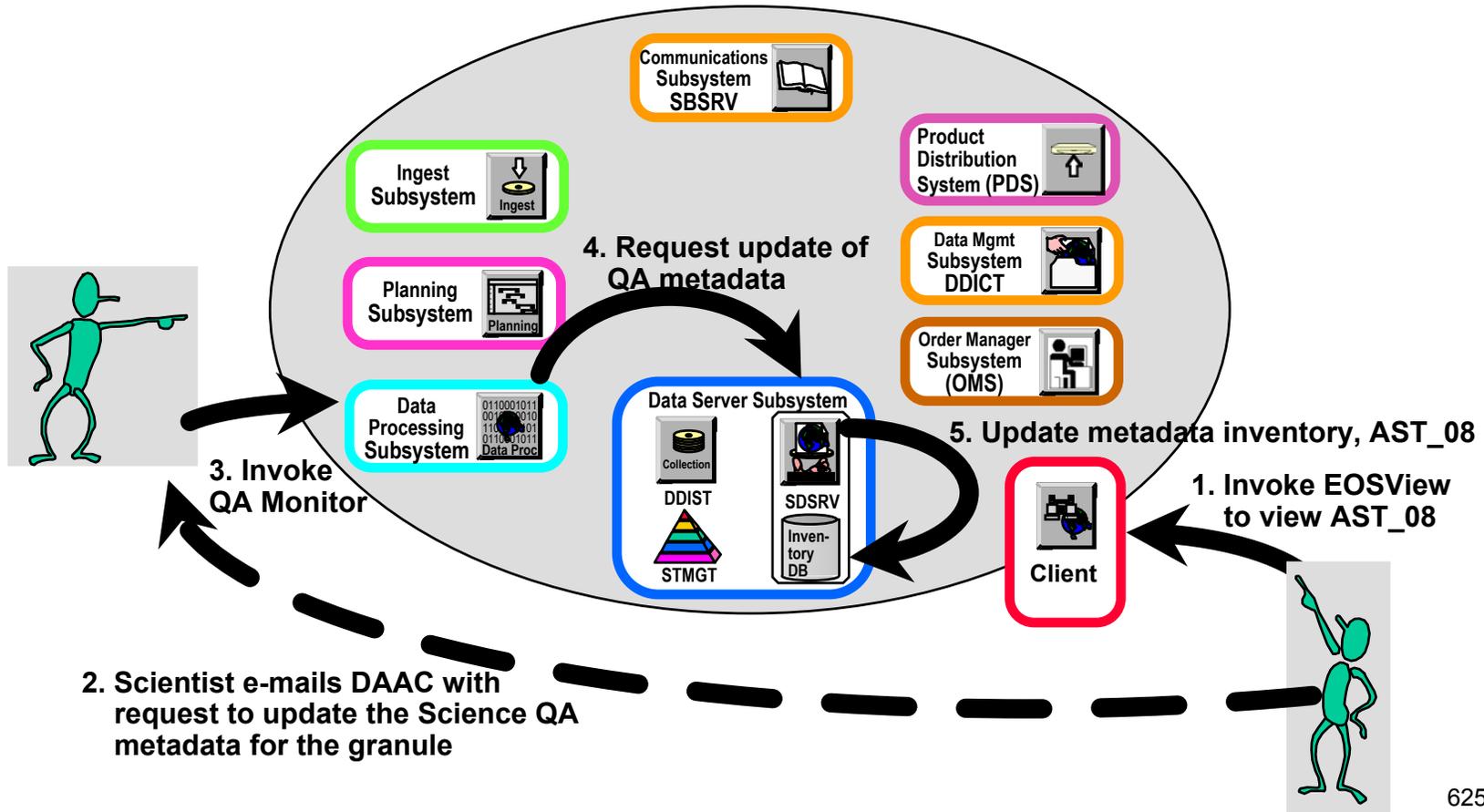
Scientist uses EOSView to perform Quality Assurance (QA) check on the AST_08 product and e-mails DAAC Operations; DAAC Operations updates AST_08 inventory metadata



ASTER: QA Metadata Update Process



Science User uses EOSView tool to review AST_08 (L2 Surface Temperature) product and sends e-mail request to DAAC Operations for update of the Science QA Metadata for the granule; DAAC Operations uses QA Monitor tool for the update.



ASTER: CSCI/Component Role in QA Metadata Update

